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WORKPLACE SAFETY AND ASBESTOS CONTAMINATION

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HEARING

OF THE

COMMITTEE ON HEALTH, EDUCATION,
LABOR, AND PENSIONS
UNITED STATES SENATE

ONE HUNDRED SEVENTH CONGRESS

FIRST SESSION

ON

EXAMINING WORKPLACE SAFETY AND ASBESTOS CONTAMINATION, FOCUSING ON THE
COMBINED AUTHORITY AND EFFORTS OF THE OCCUPATIONAL SAFETY AND HEALTH
ADMINISTRATION, MINE SAFETY AND HEALTH ADMINISTRATION, AND THE
ENVIRONMENTAL PROTECTION AGENCY TO PRESCRIBE AND ENFORCE REGULATIONS TO
PREVENT HEALTH RISKS TO WORKERS FROM EXPOSURE TO AIRBORNE ASBESTOS

JULY 31, 2001

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WORKPLACE SAFETY AND ASBESTOS CONTAMINATION

TUESDAY, JULY 31, 2001

U.S. Senate,
Committee on Health, Education, Labor, and Pensions,
Washington, DC.

The committee met, pursuant to notice, at 2:10 p.m., in room SD-430, Dirksen Senate Office Building, Senator Murray presiding.

Present: Senators Murray, Wellstone, Reed, and DeWine.

Opening Statement of Senator Murray

Senator Murray [presiding]. This committee hearing will come to order.

Good afternoon. This afternoon, we are going to hear testimony about asbestos exposure. Like many Americans, I thought asbestos was banned many years ago. In fact, if you read the newspapers, you would think so, too.

Here is an article from the Associated Press from just 3 days ago. It is titled ``Asbestos Forces College of William and Mary Freshmen out of Dorm.'' The article explains that asbestos was discovered in a freshman dormitory.

Today it is common for parts of older buildings from here in the Dirksen Senate Building to the Kennedy Center Opera House to be closed to remove asbestos. But this story that I have from 3 days ago says that asbestos was, and I quote ``banned in 1977.''

Tragically, that is just not true. Asbestos was not banned. Today it is in consumer products; it is handled by workers every day, and it is still a health danger. Many Americans think asbestos was banned because for years in the 1980's, the Environmental Protection Agency tried to ban it. Unfortunately, the asbestos industry brought a lawsuit and convinced an appeals court to overturn the ban in 1991.

Although the EPA was able to prevent new uses of this dangerous substance, asbestos remains legal for use in consumer products. Let me give you a few examples of how workers may be exposed to asbestos today.

In garages and repair shops, auto mechanics today are repairing brakes which may be tainted with asbestos. In many homes, attics, roofs, and crawl spaces are lined with Zonolite insulation which was made with vermiculite from Libby, MT. In garden centers, nursery workers are handling products made with vermiculite which may be contaminated with asbestos. On construction sites across the country, workers are handling roofing materials that contain asbestos. And finally, miners who mine for talc and taconite and vermiculite may be exposed to asbestos at work.

So the sad truth is that asbestos was not banned and is still used today. Asbestos ends up in commercial products like brake pads and roofing materials intentionally, but it also ends up in consumer products by accident. For example, many lawn care products contain vermiculite. Unfortunately, when that vermiculite is ored, it may contain traces of asbestos. So the asbestos ends up in a big bag of fertilizer, not on purpose, but through contamination. This is known as ``contaminant asbestos.''

Now, the EPA says that those small amounts will not hurt us as consumers. But what about all the workers who created the product? What should the Government do to protect those workers and the public from a known carcinogen?

I called for this hearing to raise awareness about the dangers of asbestos, to find out what protections are in place for workers today, and to learn what steps we can take to further protect American workers.

I became aware of the ongoing dangers of asbestos through a series of articles in the Seattle Post Intelligencer. The series began with an investigation into a mine in Libby, MT. For years, workers mined vermiculite at the W.R. Grace facility in Libby. Almost 200 people have died from exposure to asbestos in the mine, and many more residents are sick--in fact, dozens of those who are ill did not even work in the mine but were exposed to contamination in the air they breathed.

The problem in Libby is so bad that the Environmental Protection Agency is considering declaring the town a Superfund site. It is the Government's responsibility to protect public health. Unfortunately, the Government failed to protect the people of Libby.

But the problem is not limited to Libby, MT, as the map behind me shows. The ore that was mined in Libby, MT was sent to at least 33 States. Factories and plants in all of those States processed the tainted ore from Libby. Today efforts are underway to further investigate exposure at 17 of these sites, including a site in my home State, in Spokane, WA.

The human cost of asbestos exposure is staggering. Today workers are suffering from asbestosis and cancer. Unfortunately, it can take between 40 and 50 years for diseases from asbestos to materialize. That means that years from now, more people will become sick because of exposure that is occurring today.

This afternoon you will hear more about how asbestos and asbestiform fibers affect human health from several of our witnesses. You will also hear about how these diseases impact people's lives.

I look forward to hearing what Federal agencies are doing to protect workers. So today, with the help of our witnesses, I hope we will answer these questions and in the process help raise awareness about these dangers.

I want to thank many people who have traveled here from across this country to be here today to help raise this issue in front of Congress.

In conclusion, I am pleased that Senator Max Baucus and Senator Burns are here. They have both worked very hard on this issue, and they will both testify shortly. Congressman Rehberg from Montana will also be here shortly, and when he comes, we will interrupt where we are and allow him to testify as well.

Thank you to all of you for being here.

I will turn now to Senator DeWine and ask if he has an opening statement.

Opening Statement of Senator DeWine

Senator DeWine. Madam Chairman, thank you very much for holding this hearing. It is very, very important, and I look forward to hearing the testimony.

As you can see from the map that you have displayed, one of the sites that received the substance was in Marysville, OH, so we have not only a national interest, but for me a parochial interest as well.

I think it is important for us to investigate Government action or inaction in asbestos-related tragedies of the sort that occurred in Libby, MT. Let me also say that the asbestos issue is much larger than what happened at the mines in Libby, and the Government's involvement is not limited to simply regulations or the lack of regulations and oversight.

Our system for dealing with the tragedy associated with asbestos exposure is inadequate--it is inadequate to say the least. When a person is afflicted with asbestos-related diseases, his or her only recourse today is the court system. Certainly this system cannot give back to the afflicted the quality of life that they had prior to their exposure. It can, of course, offer victims some peace of mind through monetary awards and help with medical bills, while at the same time punishing those responsible for their conditions.

The tragedy that we face today is that the Federal Government encouraged the use of asbestos even after everyone knew its dangers. Despite its wrongdoing, the Federal Government is still sidestepping, I believe, any responsibility. In doing so, we are contributing to the second victimization of these deserving asbestos victims.

How is that so? Well, when asbestos began coming into courtrooms in droves, the Federal Government argued that it was not liable for any damages, claiming sovereign immunity. The courts accepted that argument. This left all the asbestos manufacturers responsible for payments to the victims. For a while, this arrangement was working out as far as victims won court cases and were paid by manufacturers.

However, Madam Chairman, as the number of lawsuits continued to grow and victims continued winning their claims, asbestos manufacturers started going bankrupt. Over the past 18 years, at least 34 major companies have gone bankrupt. When a company declares bankruptcy due to asbestos, it immediately stops paying claims, leaving at least some claimants uncompensated and forcing others to seek even greater amounts of compensation from the remaining solvent defendants.

These bankruptcies can drag on for years without payment to claimants. Meanwhile, still solvent defendants are forced to pick up a larger share of the overall claims to be paid due to joint and several liability, often resulting in the layoff of workers. The Federal Government, which shares some of the blame for the problem, has not paid one dime.

Because of these concerns, I introduced a bipartisan bill along with Senator Hatch, Senator Leahy, Senator Voinovich, and others that would provide targeted tax incentives for former asbestos manufacturers who were seeking to compensate victims.

Our legislation would exempt from tax any income earned by a designated settlement fund, a qualified settlement fund established for the purpose of compensating asbestos victims.

This bill would also allow companies to carry back net operating losses for the years giving rise to the asbestos liabilities.

Under our bill, any tax savings would be devoted to compensating victims. This is an effective approach to helping compensate victims and one that I urge my colleagues to support.

Again, Madam Chairman, as I said earlier, I am happy that you have called this hearing. It is my hope that Congress will look much further into this issue and in the end do the right thing to help provide deserving asbestos victims some peace of mind and quality of life.

By passing the legislation that I have referenced that changes our Tax Code, the Federal Government can in effect accept some responsibility for the situation that we are in today.

Again let me thank you, Madam Chairman, for holding the

hearing. I look forward to hearing the testimony of the witnesses.

Senator Murray. Thank you, Senator DeWine.

We will move now to our first panel.

Senator Baucus, please proceed.

Senator Baucus. Thank you, Madam Chairman.

My colleague Senator Burns has a very pressing appointment, and he asked if he could go first, and that is fine with me.

Senator Murray. Please proceed.

STATEMENTS OF HON. CONRAD BURNS, A U.S. SENATOR FROM MONTANA,
AND HON. MAX BAUCUS, A U.S. SENATOR FROM MONTANA

Senator Burns. I thank my colleague from Montana, and Madam Chairman, I want to crash your party. I would ask unanimous consent to be allowed to enter my statement in the record.

Senator Murray. Without objection.

Senator Burns. I want to thank you very much for holding this hearing. I appreciate your efforts on this, because it really does cry out for a hearing.

Also, there is a letter from the Governor of Montana to the Administrator of the EPA that I would like to put in the record.

I appreciate your patience and your understanding. I have another hearing on Spectrum over in the Commerce Committee, so I appreciate it very much, and thank you again for holding this hearing.

Senator Murray. Thank you.

[The prepared statement of Senator Burns and attachments may be found in additional material.]

Senator Murray. Senator Baucus, please proceed.

Senator Baucus. Thank you, Madam Chairman.

I have a statement which I would like to have included in the record, too, and I would just like to speak from my heart.

Senator Murray. Without objection.

Senator Baucus. This is one of the greatest personal tragedies I have ever witnessed.

Picture a small town, Libby, MT, up in the northwestern corner of our State. It is a bit insulated, a bit isolated. It is not on the main track, main roads that are traveled across our country. It is a mining town, a logging community, and with fewer logs being harvested and the mines not returning as much, this is a town that has been battered with strikes, with layoffs, and people are just struggling. These are basic Americans, men and women, trying to put food on the table, working to try to get a decent day's wage.

One of the economic underpinnings of Libby is the zonolite mine purchased by W.R. Grace. It is a huge operation very close to town. It is basically a big mine where you mine this stuff and put it in trucks that come down and go on to the railroad cars.

I visited this mine a good number of years ago and was stunned by the dust and the conditions, the bad working conditions that these people faced. It particularly struck me when the mostly men would get off the bus after coming down from the mine to the town, and it was just like a dust bin; I have never seen such dust. And clearly, the dust was not good.

I had no idea of knowing, but I think some of the employees there had a bit of an idea of knowing that it was not only dust, but that there was something here that was not quite

right.

Essentially, over a number of years, with more and more people becoming suspicious about this dust, gradually the company, W.R. Grace, began to divulge more information about what was contained in this dust.

This has been a case where lots of different groups of people dropped the ball. It is my judgment that W.R. Grace knew what was going on, knew the dust contained asbestos. This is a very serious form of asbestos called ``tremolite.'' This is the worst kind of asbestos. It does much more damage when it gets into your lungs.

Grace knew; they knew what was going on--the documents clearly indicate they knew what was going on--but did not warn their workers.

The State of Montana could have done a lot better job. The State of Montana dropped the ball--few warnings, did not follow up--it just got pushed off and so forth.

The same with the Federal Government. The EPA could have done a lot better job; the EPA dropped the ball in not investigating this a lot more closely.

As a consequence, we now have people in this little town who have been struggling years anyway just to make ends meet, now beset with a huge tragedy that is just taking over the whole community, the whole town.

The most heart-wrenching experience I ever had in my life was sitting in the living room of Les Scramsted. Les Scramsted is a resident of Libby. Les is my age. He is 59 years old. Les worked in the mine for just a little over a year.

Les would come home after working in the mine pretty dusty--and he knew something was not quite right--he would come home to his family at the end of the day, embrace his wife, and his children would jump up into his lap.

Les is dying. Les has asbestos-related disease, and I do not know how much longer Les has. He is deteriorating in front of your eyes. I have seen Les over the last couple of years when I first got involved in this issue, and it stuns me and saddens me to see just how much Les has aged. I do not know how much longer Les has to live, frankly.

At the same time, Les unwittingly transmitted the dust, asbestos, vermiculite, tremolite, to his wife--she now has asbestos-related disease--and to his kids who jumped up in his lap and hugged him when he came home.

Picture the guilt that Les has in infecting his whole family, causing his family to die because of this disease, having no idea what he was doing. Not only is he dying because he has asbestos-related disease; he is now causing his family to die. Grace is causing them all to die--and in fact, in some sense, so are we, the Federal Government, State government, because we did not do our duty.

This is a huge tragedy of immense proportions. I would guess that between 1,000 and 2,000 people in Libby are eventually going to die. As you mentioned in your statement, this is a disease which is not detected right away. Sometimes x-rays do not test positive; over a period of time, a later x-ray might test positive. It takes tremendous skill to evaluate these x-rays. It could take up to 40 years for someone who is infected with asbestosis or mesothelioma or one of these diseases to actually know.

Add to that the cleanup problems. You mentioned Superfund designation in your statement. This is a huge issue for the

people of Libby. They do not want their town to be known as a waste site. They are trying to deal with current conditions and put this behind them, get treated, and so forth. So it has that dynamic.

Again, this is the company town. The company put food on the table, yet the company caused the deaths. So think of the cross-currents that exist with all of that in this small community.

Meantime, lots of people have stepped up and done a terrific job. A couple of them are in the audience today that I know personally--Dr. Whitehead from Spokane. Lots of residents would go over and visit him; he would give them lung tests. We did not have the capability in Libby, really, they did not have the specialty to do it--although Dr. Black in Libby has done a super job and is struggling as hard as he can to get up to speed and get the equipment and so forth. Dr. Whitehead will tell you about all the patients that he has treated and the medical problems that all these people have.

EPA has now stepped up. There is a person on the ground named Paul Peronard. Paul Peronard is one of the best public servants I have ever seen. He works extremely hard--if you look at him, you would not believe it--he has a bald head and an earring and tatoos and so forth--but I will tell you this guy just bleeds for the people of Libby, and they love him. It is one of the few times where the people are working with someone from the feds who is really working very hard, and I just want you to know what a great job he is doing.

EPA is also working to negotiate with Grace which area to clean up and in what way. In my judgment, Grace is foot-dragging. They are not allowing access to the site the way they should. That is part of the problem here. I think EPA is trying to do the best they can given the difficult situation.

There is another Federal agency, the ATSDR, which is affiliated with the Centers for Disease Control in Atlanta. They are doing the screening. To be honest, it took them a little bit to get up to speed. I think they kind of looked down their noses a bit at Libby, MT way up there, but we finally got them up to Libby and they saw the sad plight that these people are faced with, and now they are doing a lot of the screening. So ATSDR is doing the screening, and they have EPA trying to help with the cleanup.

Senator DeWine mentioned the bill. This may be a partial solution to help the people of Libby. Earlier legislation introduced last year let the company off the hook; but now, with all the lawsuits and with the company threatening bankruptcy, legislation like this is necessary.

It is also clear to me that Grace has transferred 89 percent of their assets beyond the reach of any bankruptcy court to minimize liability. There are public statements from Grace officials to that effect saying ``We are making this reorganization to insulate ourselves from bankruptcy.''

This is just one of the worst cases I have ever seen, and I just hope the committee--and I know the committee will really think thoughtfully about this as we now try to figure out how to put together the pieces and how to get the regulations in place to deal with the current problem as it continues to exist. As you mentioned, regrettably, major national newspapers have erroneously claimed that the problem has stopped. It has not stopped. I do not know how they got that misinformation, but they have, it is out there, and people think it is not a

problem. It is; it is still in the air; it is in the ground.

This stuff was taken down to Libby and spread on the ball fields where the kids play baseball. That is how some of the kids got it. It is in the gardens. The stuff is all over town. It was put into attic insulation. The problem now is how to deal with the insulation in the attics. And I know the problems in the rest of the country.

At one time, this mine provided 80 percent of the vermiculite in the world--80 percent at its peak. This stuff is all over, and it is a huge dereliction of responsibility--responsibility by the company, responsibility by the local, State and Federal Government--and I just hope we have learned a lesson from this to minimize something like this ever happening again.

Thank you.

[The prepared statement of Senator Baucus may be found in additional material.]

Senator Murray. Thank you, Senator Baucus, for a very compelling story about a small town in your State that has had an impact that no city in this country should have to go through.

I certainly think that we need to do everything we can to help the citizens there and to make sure this never happens again. What is most astounding to me is that it is not like this is not happening. It is happening. There are products being used everywhere, and we need to do what we can to let the public know that this is a problem, and we have to decide as a Federal Government what our part is in making sure that consumers know that.

Senator Baucus. Just remember Les Scramsted. That is all I ask is that you remember Les.

Senator Murray. Well, thank you very much, Senator Baucus, and I will ask you to join us on the dias here in just a few minutes.

Senator Wellstone, did you have any questions?

Senator Wellstone. I am going to be very brief. I want to say three things in less than 2 minutes.

The first is that, Max, I do not believe that I have ever heard you speak better. I have never seen you--that is not to say that you have not spoken with emotion and made a compelling case since I have been here in the Senate--but I have never quite seen you this way, and it is because it is all very personal; you know the people. And I would thank you.

That is my first point. My second point is that we know in Minnesota how far the tentacles of this contamination can reach. We have thousands of citizens in Minneapolis who are potentially at risk from a facility that processed this asbestos-laden vermiculite from the W.R. Grace Co. in Libby, MT. Unfortunately, lots of people in Minnesota are vulnerable.

My third point is that Bruce Vento, who was a very dear friend of mine from Minnesota, a Congressman from the 4th District, died of mesothelioma or asbestosis. It came from exposure to asbestos at work when he was younger. Bruce went very fast; it is a very cruel disease. We must do all we can to prevent future illnesses and deaths from asbestosis.

My fourth point is that I remember assigning a book when I was teaching that I think was written in 1970 by Paul Brodier, as I remember, titled ``Expendable Americans.'' I only mention it because of the title, but again, this was about the same issue. It was about some workers in Tyler, TX, and the industry

knew, and they died of mesothelioma and asbestosis, and the industry knew. They had known forever and ever and ever, and they did not let them know--thus, they were expendable, they were just made expendable. It is just simply outrageous.

Finally, I have a statement that I would ask to be included in the record. As chair of the subcommittee that has jurisdiction over OSHA and workplace safety and mine safety and other issues, this is very important in terms of MSHA, and I know we have the director here, and I welcome him.

So I thank you for this hearing, Madam Chairman. It is extremely important.

Senator Murray. Thank you, Senator Wellstone.

Senator Wellstone. Thank you for your testimony, Max.

Senator Baucus. Thank you.

Senator Murray. Senator DeWine?

Senator DeWine. I have no questions, Madam Chairman.

Senator Murray. Senator Baucus, if you want to join us on the dias for our other panels, that would really be appreciated.

Senator Baucus. Thank you. I will for a short while.

Senator Murray. I would ask our second panel to come forward now.

David Lauriski is Assistant Secretary for Mine Safety and Health at the Department of Labor.

Davis Layne is acting Assistant Secretary for Occupational safety and health at the Department of Labor.

Kathleen M. Rest, Ph.D., is acting Director of the National Institute for Occupational Safety and Health, Centers for Disease Control and Prevention, Department of Health and Human Services.

And Michael Shapiro is acting Assistant Administrator of the Office of Solid Waste and Emergency Response at the EPA.

David Lauriski, we will begin with you.

STATEMENTS OF DAVID D. LAURISKI, ASSISTANT SECRETARY FOR MINE SAFETY AND HEALTH, U.S. DEPARTMENT OF LABOR; R. DAVIS LAYNE, ACTING ASSISTANT SECRETARY FOR OCCUPATIONAL SAFETY AND HEALTH, U.S. DEPARTMENT OF LABOR; KATHLEEN M. REST, ACTING DIRECTOR, NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH, CENTERS FOR DISEASE CONTROL AND PREVENTION, U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES; AND MICHAEL SHAPIRO, ACTING ASSISTANT ADMINISTRATOR, OFFICE OF SOLID WASTE AND EMERGENCY RESPONSE, U.S. ENVIRONMENTAL PROTECTION AGENCY

Mr. Lauriski. Madam Chair and members of the committee, I am pleased to appear before you today to discuss the ongoing efforts of the Mine Safety and Health Administration to promote miner safety and health.

With your permission, I will provide you with an abbreviated version of my statement and would ask that my full statement be entered for the record.

Senator Murray. Without objection.

Mr. Lauriski. Having spent virtually all of my life and career associated with the mining industry, it is a privilege for me to serve the American people, Secretary Chao, and President Bush in this important capacity. We will do everything we can to improve upon the tremendous advances in safety and health in the mining industry that have occurred over the past 30 years.

I have shared with the MSHA staff my priorities and

expectations and would like to share them with you.

Mining in the 21st century presents us with new opportunities. If we are to continue the success of the past, we must find new and creative approaches to protecting health and safety.

I am firmly committed to carrying out the responsibilities under the Federal Mine Health and Safety Act of 1977, but as both the Secretary and I have said, investments in up-front prevention through compliance assistance, education, training, and other outreach activities are critical if we are to move off the plateau that we have seemed to reach in the past few years. In this regard, I have asked MSHA staff, mines, mine operators, as well as representatives of the mining community and labor associations, to think creatively. I am firmly committed to hearing the thoughts, suggestions, and ideas of all of our stakeholders.

This hearing focuses on workplace safety and asbestos contamination. MSHA's asbestos regulations date to 1967. At that time, the Bureau of Mines used a 5 million particles per cubic foot of air standard. Through the years, up until 1978, that standard was changed an additional three times to the current standard of 2 fibers per milliliter. Since enactment of the Mine Act, MSHA has conducted regular inspections at both surface and underground operations at metal and nonmetal mines. During its inspections, MSHA routinely takes samples which are analyzed for compliance with the asbestos standard.

In briefings with the MSHA staff, I was advised on the issues surrounding vermiculite mining in Libby, MT and elsewhere. I was pleased to learn that the Agency had taken steps to determine current mines' exposure levels to asbestos, including taking samples at all existing vermiculite, taconite, talc, and other mines to determine whether asbestos was present and at what levels.

Since spring of 2000, MSHA has taken almost 900 samples at more than 40 operations employing more than 4,000 miners. During our sampling events, the MSHA staff also discussed with the miners and mine operators the potential hazards of asbestos and the types of preventive measure that could be implemented to reduce exposures. These efforts continue today.

I have read the Office of Inspector General's evaluation of MSHA's handling of inspections at the W.R. Grace & Company mine in Libby, MT which was issued in March of this year. The report contains five recommendations, and I can assure you that we are diligently working to address the issues raised in those recommendations.

The Inspector General recommended that MSHA lower its existing permissible exposure limit for asbestos to a more protective level and address take-home contamination from asbestos. It also recommended that MSHA use transmission electron microscopy to analyze fiber samples that may contain asbestos.

We are currently considering these recommendations, which would involve rulemaking. I appreciate the review and analysis conducted by the Inspector General and am giving considerable thought to their recommendations as we work toward our decisions. Please be assured that I share your conviction that miners' health must be protected, and certainly miners should not be exposed to contamination at hazardous levels.

The Inspector General also recommended that the Agency remind its staff of the Mine Act's prohibition of giving

advance notice of inspections. Section 103(a) of the Mine Act states in part that ``in carrying out the requirements of this subsection, no advance notice of an inspection shall be provided to any person.'' I am pleased to report that MSHA recently reissued a memorandum to the Agency's inspectors for metal and nonmetal, reminding them of this provision.

Finally, a fifth recommendation of the report dealt with training of MSHA inspectors and other health professionals on asbestos-related matters. We have held training sessions to date with our industrial hygienists, and we are working diligently with our mine inspectorate so that they can recognize asbestos in their daily work activities.

We believe that education and training are critical to promoting miner safety and health. They provide mine operators and miners with the knowledge needed to take actions to prevent injuries and illnesses. Sharing our knowledge and information with the mining public and other interested parties is part of our education and training efforts.

The Mine Act in my view gives MSHA all the tools necessary to protect miners' safety and health. The history of miners' safety and health over the past 25 to 30 years demonstrates the statute's effectiveness. The Libby experience is of course troubling. More effective and efficient use of the Mine Act's enforcement, education, training, and technical support authorities will help us achieve even greater improvements in our industry. These provisions as well as those outlining our rulemaking authorities and responsibilities provide us with the necessary framework to ensure miners are appropriately protected from harmful contaminants including asbestos.

Madam Chair, members of the committee that concludes my remarks. I would be happy to answer any questions you might have.

Senator Murray. Thank you.

[The prepared statement of Mr. Lauriski may be found in additional material.]

Senator Murray. Mr. Layne?

Mr. Layne. Thank you, Madam Chair.

With your permission, I would like to have OSHA's complete formal testimony entered into the record and briefly summarize my statement for the committee.

Senator Murray. Without objection.

Mr. Layne. Thank you.

I too appreciate the opportunity to testify today on how the Occupational Safety and Health Administration protects workers from the dangers of asbestos exposure.

Asbestos can cause a variety of serious health effects including asbestosis, mesothelioma, lung cancer, and many other types.

The Occupational Safety and Health Act gives the Secretary of Labor authority over all working conditions of employees engaged in business affecting commerce, except those conditions with respect to which other Federal agencies exercise statutory authority to prescribe or enforce regulations affecting occupational safety or health.

Since OSHA's inception in 1971, the agency has used its authority for standard-setting, enforcement, and compliance assistance to protect workers from the threat of asbestos. In fact, there has been more rulemaking activity involving asbestos than any other hazard regulated by OSHA. Between 1971 and 1994, OSHA issued two emergency temporary standards, three

major notices of proposed rulemaking, three final rules, and 31 Federal Register notices related to asbestos.

Indeed, the final asbestos rule issued in June 1972 was the agency's first comprehensive standard. This regulation reduced the permissible exposure limit or PEL to an 8-hour, time-weighted average of two fibers per cubic centimeter of air, with a maximum ceiling of 10 fibers at any one time.

In June of 1986, due to new scientific evidence regarding the carcinogenicity of asbestos, the PEL was lowered to an 8-hour, time-weighted average of 0.2 fibers per cubic centimeter of air. This rule provided for engineering controls, work practices, personal protective clothing and equipment, decontamination, communication of hazards to workers, regulated areas, housekeeping procedures, recordkeeping, and employee training.

Further, in August of 1994, to provide even better worker protection, OSHA published two final asbestos standards--one for general industry and one for construction. It also added shipyards as a covered industry. The permissible exposure limit was reduced to 0.1 fiber per cubic centimeter. Work practices and engineering controls required under the 1994 standard further reduced the risk to workers.

The standard also addresses exposures during automobile brake and clutch work and roofing work as well. It requires that engineering controls and good work practices be implemented at all times during brake servicing. In addition, employers must provide training to all brake and clutch repair workers.

OSHA enforces the current asbestos standard through its inspection program. Since October 1995, OSHA has cited employers for violations of its asbestos standards over 15,000 times. There were almost 3,000 inspections conducted by Federal or State OSHA programs in which the standard violations were cited, including violations found in residential and commercial construction, auto repair facilities such as brake shops, as well as hotels.

In addition to enforcement, OSHA provides compliance assistance to employers and employees to help them understand the dangers associated with asbestos and what can be done to minimize that threat. OSHA's web page connects computer users to concise and easy-to-read publications on asbestos which are available to the public free of charge. OSHA has also developed software that can be downloaded from its web site to provide expert interactive advisers for building owners, managers and lessees, as well as for contractors of building renovation, maintenance, and housekeeping services.

Once installed on a computer, the software asks questions about a particular building site. It then asks follow-up questions based upon answers and produces a report on responsibilities under the asbestos rules.

OSHA's onsite consultation program, which is free and available to employers in all 50 States, provides expert assistance on asbestos. Consultants identify asbestos in the workplace and explain methods for reducing exposure. Over the last 5 years, the State consultants have taken over 800 asbestos samples from 162 small businesses for laboratory analysis.

OSHA actively coordinates with other Federal agencies on asbestos and asbestos-related issues. The OMNE Committee, composed of representatives from OSHA, MSHA, the National

Institute for Occupational Safety and Health, and the Environmental Protection Agency, meets monthly to exchange information about mutual areas of concern.

OSHA has also requested technical assistance from NIOSH to determine potential asbestos exposure from working with materials that contain vermiculite. In response to our request, NIOSH has conducted investigations of horticultural facilities to determine potential exposures to employees from asbestos-contaminated vermiculite used in potting soil and lawn and garden products. In addition, NIOSH is in the process of investigating exposures at vermiculite exfoliation plants, and a report from NIOSH is expected by the end of this year.

OSHA has continuous, multifaceted programs to address health and safety hazards associated with asbestos, both in production and as a contaminant. These programs apply to all workplace settings covered by the OSH Act and are intended to protect all workers, including those who process and work with materials potentially contaminated with asbestos.

OSHA believes its current statutory authorities are sufficient to carry out its responsibilities. Given its broad mission to protect workers from all types of occupational hazards, over the years, the agency has devoted a significant portion of its resources to the health effects caused by asbestos exposure and will continue to do so.

This concludes OSHA's formal remarks. I will be pleased to answer any questions the committee may have.

Senator Murray. Thank you, Mr. Layne.

[The prepared statement of Mr. Layne may be found in additional material.]

Senator Murray. Ms. Rest?

Ms. Rest. Madam Chairman, members of the committee, I am pleased to be here today on behalf of NIOSH, the National Institute for Occupational Safety and Health, which as you know is a public health research institute within the Centers for Disease Control and Prevention, a part of the Department of Health and Human Services.

With me today is Dr. Gregory Wagner, Director of the NIOSH Division of Respiratory Disease Studies in Morgantown, WV.

My comments will summarize briefly the more detailed written statement that we have prepared and submitted for the record. My testimony will briefly describe asbestos and asbestos-related diseases, current scientific knowledge about the hazards to workers from exposure to asbestos, NIOSH's ongoing research related to this problem, and opportunities for better prevention of asbestos exposure and asbestos-related disease.

Asbestos is a term that refers to a group of naturally-occurring fibrous minerals. The connection between inhalation of asbestos fibers and a number of very serious and often fatal diseases is well-established. Nevertheless, as you said, asbestos and asbestos-containing materials are still found in many residential and commercial settings where they continue to pose a risk of exposure and disease to workers and to others.

Asbestos is a known human carcinogen. It can cause both malignant and nonmalignant diseases, including asbestosis, which is an emphysema-like disease, pleural disease, lung cancer, malignant mesothelioma, cancer of the larynx and of the gastrointestinal tract. These diseases are described more fully in our written statement. Suffice it to say that most of these diseases take years to develop, they are often fatal, and they

are preceded by many years of debilitating illness that brings emotional and financial devastation to workers and to their families.

It is not known exactly how asbestos fibers cause disease, but what is known is that fibers too small to be seen by the human eye can become airborne during various industrial processes or from handling these asbestos-containing products. These microscopic fibers can be inhaled or swallowed. When inhaled, these fibers can remain lodged in the lungs where, because of their size and their durability, the body may be unable to remove them.

In general, as the amount of the fiber that stays in the lung increases, so too does the likelihood of the disease.

Vast numbers of workers, as many as 8 million, have been exposed to asbestos since World War II. As of the early 1990's, NIOSH estimated that nearly 700,000 workers in general industry remain potentially exposed--and that estimate did not include workers in mining, railroad, agriculture and several other industry sectors.

Asbestos continues to be found in many occupational and industrial settings, including the manufacture and repair of automotive brakes and clutch linings; it is found in certain manufactured products, including gaskets and building materials. Construction workers involved in building demolition and renovation, or in asbestos removal, are at particular risk of asbestos exposure, as are maintenance personnel.

In addition, take-home exposures to families of workers in which workers bring home asbestos in their hair, on their clothes, or on their shoes, is also a well-recognized hazard.

Because there is no recognized safe level of exposure for the carcinogenic effects of asbestos, exposure prevention is key. One approach to preventing worker exposure includes substitution of less hazardous materials; improved labeling of all asbestos-containing materials would also help alert employers and workers to the need to implement effective exposure controls.

As mentioned, deaths from asbestos-related disease reflect exposures from years earlier. To provide a better understanding of more recent occupational exposure, NIOSH analyzed asbestos sampling data collected by both OSHA and MSHA inspectors during the period 1987 to 1996. While concentrations of asbestos decreased over that period of time, asbestos continued to be detected in workplace settings ranging from textile operations to schools.

Furthermore, the airborne asbestos fiber concentrations were detected above the regulatory exposure limit.

At OSHA's request and as indicated, NIOSH is providing technical assistance to assess exposure to asbestos and other mineral fibers at specific worksites, including selected vermiculite expansion plants and horticultural operations that use vermiculite. We expect to complete the field data collection by early in calendar year 2002.

In 1990 testimony to OSHA, NIOSH broadened its science-based definition of asbestos beyond the six specific asbestos minerals currently regulated. NIOSH based its definition on scientific evidence from animal and cellular studies suggesting that fiber dimension--specifically, length and diameter--and durability are more critical than the specific chemical or elemental composition in the causation of asbestos-related disease.

The NIOSH definition encompasses certain variants of the six----

Senator Murray. Dr. Rest, if you could summarize, please, because we have a large second panel that we want to hear as well.

Ms. Rest. Certainly. In conclusion, we know a lot about the adverse health effects caused by the inhalation of asbestos fibers, and we have known it for a long time. Many exposures or potential exposures in the workplace have been identified, and appropriate precautions are being taken.

However, many research questions remain to be answered to more fully understand the health effects of asbestos-like minerals and to prevent asbestos-related disease. Increased understanding of the health effects of these fibrous minerals that fall outside existing definitions would help us find better ways to provide appropriate protection for these workers, as would continued identification and tracking of workers in workplaces with potential exposure to these fiber-contaminated vermiculite and other contaminated materials.

Thank you, Senator Murray and members of the committee. I would be happy to answer any questions.

Senator Murray. Thank you.

[The prepared statement of Ms. Rest may be found in additional material.]

Senator Murray. Mr. Shapiro.

Mr. Shapiro. Good afternoon, Madam Chairman and members of the committee. I too have submitted our full testimony for the record and will be presenting a summary.

I am pleased to be here today to discuss EPA's efforts to clean up asbestos contamination in Libby, MT and the Agency's efforts to identify related sites nationwide.

I want to make it clear that EPA views the Libby asbestos site as one of the most significant sites we are dealing with nationally, and we are committed to working with our partners to take all steps necessary to protect human health and the environment in Libby and related locations.

As Senator Baucus noted, Libby is a small town of about 2,600 residents in northwest Montana. For more than 60 years, a mine operated in Libby which produced 80 percent of the world's vermiculite. The vermiculite was shipped around the country for use as a soil conditioner and in the manufacture of insulation and packaging material. The mine and processing facilities in Libby employed roughly 2,000 workers from 1924 to 1991.

One of the substances in the Libby vermiculite ore was asbestos. Asbestos contamination resulting from mining and processing operations has led to serious public health concerns among members of the Libby community.

EPA is working closely with other Federal and State agencies to address the asbestos contamination and public health concerns in Libby and other communities across the country. The response to potential asbestos contamination is a multiagency effort. EPA, the Agency for Toxic Substances and Disease Registry, ATSDR, and the U.S. Public Health Service established an emergency response team on November 22, 1999 to begin environmental and medical investigations in Libby.

EPA is focusing on site investigation and cleanup activities in Libby using its Superfund authority. The Agency is also using Superfund to assess the need for cleanup at other locations across the country where vermiculite ore was mined or shipped.

Thus far, EPA has committed more than \$30 million for the investigation and cleanup in Libby.

In June of 2000, EPA initiated or provided oversight of cleanup at two heavily contaminated former processing areas in Libby. The Agency has also started the cleanup of a mining road, town park facilities, a high school track, and several residences.

In addition to Libby, EPA identified 243 locations around the country that may have mined or received vermiculite from a variety of sources. As of early July, EPA completed initial evaluations of possible asbestos contamination at 216 of these facilities. Thus far, we have determined that 17 locations require response by EPA and other Federal or State agencies.

One example is the Western Minerals site in Minneapolis, MN, which processed over 118,000 tons of vermiculite ore from Libby between 1937 and 1989. Since September of 2000, EPA and the State of Minnesota have been sampling and removing asbestos contamination at the former plant site and nearby residential yards. An ATSDR-funded health survey is being conducted by the Minnesota Department of Health to determine the magnitude of the health impacts to former workers and nearby residents.

In March of 2001, EPA's Office of Inspector General issued a report which focused on EPA's activities in Libby as well as EPA's broader role in regulating asbestos. The report concluded that EPA should continue its cleanup efforts in Libby and also emphasized the importance of cross-agency coordination to address potential contamination associated with mining and other operations unrelated to Libby.

EPA will continue to work closely with our Federal partners, including MSHA, OSHA, ATSDR, NIOSH, and the Public Health Services to protect the public health in Libby, MT and any other community that may be threatened by asbestos contamination from vermiculite ore or other sources.

EPA is also coordinating closely with our Federal and State partners to evaluate health data that may suggest additional sources of contamination.

Thank you for the opportunity to appear today. I welcome any additional follow-on questions.

[The prepared statement of Mr. Shapiro may be found in additional material.]

Senator Murray. Thank you very much to all of our panelists.

If there is no objection, Senator Wellstone has asked for 10 seconds to make a statement, and then we will turn to Congressman Rehberg for an opening statement and then we will go back to questions of the panel.

Senator Wellstone?

Senator Wellstone. Thank you, Madam Chair. I do not know if I can quite do it in 10 seconds., and it is actually not to make a statement. I just wanted to say to Mr. Shapiro that if it is okay, I want to put some questions to you in writing for your response.

And to Mr. Lauriski, thank you for being here, and thank you for coming by last week when we had a chance to talk. I want to also get a few questions to you in writing if I could. It sounds like you are going to be going in a different direction. You mentioned looking at a new rule, because I know your standard is far less rigorous than EPA or OSHA, and even with the workers in Libby, although several hundred have died, by your standard, many of them were, at least theoretically,

not in harm's way, but they were, and I am wondering if you will be considering promulgating a rule to get a much stronger standard--but could I put that to you in writing and get your response?

Mr. Lauriski. Certainly.

Senator Wellstone. Thank you.

Thank you, Madam Chair.

Senator Murray. Thank you, Senator Wellstone.

[Written questions of Senator Wellstone may be found in additional material.]

Senator Murray. Congressman Rehberg, please proceed.

STATEMENT OF HON. DENNIS REHBERG, A REPRESENTATIVE IN CONGRESS
FROM THE STATE OF MONTANA

Mr. Rehberg. Thank you, Senator Murray.

I am a little nervous to be here. This is my first opportunity to be on the Senate side--and I can tell you I do not believe everything my House Members have told me about you--although I understand you are very cheap over here; my chair has broken already. [Laughter.]

I am late. We were voting on the rule on cloning. I suspect that if it had passed 45 years ago, I could have done them both at the same time. But I am here now, and I thank you for giving me the opportunity to join my colleague Senator Baucus--and thank you, Max, for taking the lead on this very important issue.

I am here today as the Member of the House of Representatives representing the entire State of Montana and in this case the community of Libby in Lincoln County.

As you may know, vermiculite ore has been mined near Libby since the 1920's. Most recently, it was mined by W.R. Grace & Company. A great deal of evidence indicates that many Libby area residents died or became ill due to exposure to asbestos-contaminated vermiculite ore.

I visited the community four times in the last year, including two times since taking office in January. During my most recent visit on July 6, 2001, I held a community meeting. After listening to 3 hours of testimony and discussion at that meeting, one thing became perfectly clear: The community has a right to know more about the current and past efforts by the Environmental Protection Agency to protect local residents from the health threats caused by asbestos-contaminated vermiculite ore.

I also determined that in the future, the actions and inactions of the past must be avoided at all costs to prevent another situation from occurring like the one that did in Libby.

On July 12, 2001, Inspector General for the EPA Nikki Tinsley went to Montana to discuss the contents of the report, ``EPA's Actions Concerning Asbestos-Contaminated Vermiculite in Libby, Montana'' released on March 31st of this year.

At this meeting, Inspector General Tinsley was able to provide some useful information. However, the Inspector General's report failed to address several important issues that are pertinent to the Libby situation.

As a result, I have requested the General Accounting Office to conduct an official investigation into the EPA's actions surrounding its efforts to address the very serious health threats the Libby community has faced and continues to face.

We now know that W.R. Grace was aware of the potential health threat their mined product posed. We know that EPA had numerous documentations of asbestos-related health issues because of the mining practices in Libby, along with conflicting information on the dangers of vermiculite. What we do not know is why the EPA did not take a closer look at the health-related issues in Libby in light of the history of reports, letters and studies documenting health problems there.

I understand that funding limitations and other priorities can be distractions to an agency, but in Libby and all across the country, people were and are dying.

The EPA has spent upward of 20 years studying the reports of asbestos-related disease in Montana and elsewhere due to exposure to W.R. Grace mine products. In the meantime, people have been dying, exposure has continued, and the community has been torn apart.

It is important that Congress continue to explore possible changes to Federal laws and regulations that can help the Libby community in its efforts to address its ongoing health-related problems and to see that any past mistakes can be avoided in the future. Libby provides a tragic example of how uncertainty about levels of contamination can prove to be fatal.

I thank the committee for having this hearing and urge you to keep people in mind as you continue to explore this issue, because we cannot put a price on human life. It is incumbent upon us to err on the side of caution when dealing with toxic substances.

I understand the tragedy in Libby cannot be undone, but it is only through introspection that we can avoid in the future the mistakes of the past.

Thank you, Senator Murray.

Senator Murray. Thank you very much, Congressman. Thank you for joining us today.

The Senate has called a vote. I am going to ask three very quick questions and then let Senator Baucus ask a question, and then we will take a short recess and come back for further questioning and our third panel.

Dr. Rest, let me begin with you. A yes or no answer--do you believe that asbestos should be banned altogether in the United States to protect public health?

Ms. Rest. I believe the best way to protect people from a hazard as serious as asbestos is to prevent exposure to that material and do everything we can to----

Senator Murray. Do you believe it should be banned?

Ms. Rest. I believe that we have to do everything we can to prevent the exposure.

Senator Murray. Mr. Shapiro, do you believe that we should ban asbestos?

Mr. Shapiro. Speaking on behalf of EPA, as you know, at one point, we did propose and actually promulgated a rule to ban asbestos in most products. That rule was overturned by court decision. At this point, we have not reached any conclusion about whether to re-look at the issue of banning products.

Senator Murray. It is my understanding that the administration at that time back in 1991 did not pursue that case to further courts; is that correct?

Mr. Shapiro. I believe you are correct, yes.

Senator Murray. OK.

Mr. Layne, quickly, you mentioned a lot that OSHA is doing to prevent this kind of disaster. How do we explain that today

people are still being exposed to asbestos in everything from mechanics' shops to nurseries to mines if we are doing so much?

Mr. Layne. It is really a continuing issue that we face on job safety and health generally across the board, and that is to look for innovative ways that we can reach employers and employees and educate them about workplace hazards.

Senator Murray. And since that takes so much time and obviously has not been effective, do you think we should ban asbestos?

Mr. Layne. I think the regulations that we have in place, if followed, can protect the worker.

Senator Murray. Senator Baucus?

Senator Baucus. Thank you, Madam Chairman.

You know, one of the big problems here is that agencies tend to point the finger at other agencies as being responsible, and they do not live up to their own responsibilities. There is just too great a dispersion of authority, and it is so easy for agencies to not step up and do what the public expects them to do. We do not have time to get into that at this point, but I hope that during the rest of this hearing and at some very imminent appropriate date, that can be settled and that a lot of you can figure out, not only with respect to asbestos but other problems that arise, how you can avoid passing the buck to the other agencies. I think a lot of that has happened here.

Another question that I have a hard time answering is why do we need more studies. It is pretty clear what has happened in Libby. I do not think anybody needs more evidence. I understand EPA has a blue ribbon panel to study asbestos--at least, that is what one of your administrators or someone at EPA testified to a short while ago. One of your agencies has a standard that is 20 times more lenient than another. I do not know what gives here.

There are other mines operating today. Libby, fortunately, is closed; the mine has been shut down. But there are other mines--I understand we will hear from someone later from Virginia. I do not know how much he is exposed; my guess is to some degree similar to the exposure of Les Scramsted in Libby.

I do not know how much more you folks need. I do not know how much value you place on people's lives. I think you hide behind rules. I think you hide behind regulations. You hide by passing the buck. These are people who are dying.

I want all four of you to come to Libby, MT, and I want you to look in their faces. I want you to see Les Scramsted--and you had better hurry; you had better hurry if you are going to see Les. [Applause.]

Senator Murray. The audience will please remain silent.

Senator Baucus. Can I get a commitment out of each of the four of you that you will come to Libby, MT this summer?

Mr. Shapiro?

Mr. Shapiro. I would be happy to.

Senator Baucus. Dr. Rest?

Ms. Rest. Absolutely.

Senator Baucus. Mr. Lauriski?

Mr. Lauriski. I would be happy to.

Senator Baucus. Mr. Layne?

Mr. Layne. Yes, sir. We are expecting a new assistant Secretary soon, and I will pass that on to him.

Senator Baucus. And I would like you to go, too.

Mr. Layne. Yes, sir.

Senator Baucus. All right.

I have no further questions. Thank you.

Senator Murray. Thank you, Senator Baucus.

We are going to take a short 5-minute recess to allow Senators to vote, and we will resume this panel for final questions when we come back and then go to our final panel.

[Recess.]

Senator Murray. We will resume the hearing, and in the interest of time, since this hearing is supposed to conclude at 4 o'clock, unfortunately, and we got started a little late and had a vote in between and are going to have another vote shortly, because of that, I and any other Senators on this committee will submit our questions to this panel, and if we could get you to respond in writing, I would really appreciate it, since we have a number of people who have traveled here from around the country who are unable to come back again.

What I will do, then, is dismiss this panel and ask our second panel to come forward at this time.

[Written questions from Senators may be found in additional material.]

Senator Murray. We will now begin with the second panel. I will remind everyone that they have 5 minutes, and I will gently remind you when your time has expired.

Today we will begin with Dr. Richard Lemen, a professor and private consultant from Emory University in Atlanta, GA; John Addison, an epidemiologist with John Addison Consultancy, United Kingdom; George Biekkola, a former employee of Cleveland Cliff Iron, L'Anse, MI; Dr. Michael R. Harbut, medical director of the Center for Occupational and Environmental Medicine in Southfield, MI; Dr. Alan Whitehouse, a board-certified chest physician in private practice in Spokane, WA; David Pinter, a former employee of Virginia Vermiculite, Incorporated, from Louisa, VA; and Ned Gumble, mine manager of Virginia Vermiculite, from Louisa, VA.

Again, thank you to all of you. I know some of you traveled a long way to be here today, some with health problems, and I really appreciate you coming and giving your testimony to the committee today.

Let us begin with Dr. Richard Lemen.

STATEMENTS OF DR. RICHARD LEMEN, PROFESSOR AND PRIVATE CONSULTANT, EMORY UNIVERSITY, ATLANTA, GA; JOHN ADDISON, EPIDEMIOLOGIST, JOHN ADDISON CONSULTANCY, UNITED KINGDOM; GEORGE BIEKKOLA, FORMER EMPLOYEE, CLEVELAND CLIFF IRON, L'ANSE, MI; DR. MICHAEL R. HARBUT, MEDICAL DIRECTOR, CENTER FOR OCCUPATIONAL AND ENVIRONMENTAL MEDICINE, SOUTHFIELD, MI; DR. ALAN WHITEHOUSE, BOARD-CERTIFIED CHEST PHYSICIAN, SPOKANE, WA; DAVID PINTER, FORMER EMPLOYEE, VIRGINIA VERMICULITE, INC., LOUISA, VA; AND NED K. GUMBLE, MINE MANAGER, VIRGINIA VERMICULITE, INC., LOUISA, VA

Dr. Lemen. Thank you for inviting me, Senator Murray, to this very important hearing on the topic of asbestos and disease.

I am Dr. Richard Lemen. I retired from the United States Public Health Service, where I was Assistant Surgeon General of the United States and deputy director and acting director of the National Institute for Occupational Safety and Health. I have spent virtually my entire professional career since 1970 studying the health effects related to asbestos exposure.

In the United States, it is estimated that between 189,000 and 231,000 deaths have occurred since 1980 due to workplace exposure to asbestos. Another 270,000 to 330,000 deaths are expected to occur over the next 30 years, and for those workers exposed over a working lifetime to the current Occupational Safety and Health Administration 0.1 fibers per cc, three out of every 1,000 will die as a result of asbestos-related diseases.

Given that the National Institute for Occupational Safety and Health estimates, as of 1990, that nearly 700,000 men and women are potentially exposed at work, the future mortality from asbestos-related disease will continue to occur well into this new century.

If deaths of workers exposed to asbestos in the United States at the current occupational standard are anywhere near the magnitude just expressed, what, then, would be the magnitude of disease and death to the countless number of unsuspecting consumers using asbestos-containing products?

These products include such things found in the home as lamp sockets, floors, cat box fill, braking mechanisms in washing machines, furnaces, dishwashers, lawn products, and many, many others.

Because these products are not only manufactured by workers but are also used, maintained and repaired by workers, the workers suffer additional exposure from consumer products.

Why, then, is any form of asbestos still allowed in commercial products within the United States or the rest of the world, for that matter? The Environmental Protection Agency produced a list on the internet that I observed of at least 44 suspected asbestos-containing materials. Within their list were cement pipes still being used for transportation of potable drinking water and friction products such as brakes, to name just two of the widely-used commercial products.

Imports of asbestos-containing products still arrive in the United States each year and include such things as asbestos-containing corrugated sheet, sheet panels, tubes and pipes, brake linings, gaskets, and for brakes alone over the last 4 years, the imports have increased from \$59 million in 1996 to \$89 million in the year 2000; asbestos textile products in the form of yarn, thread, cord, string, knitted material, clothing--and they all appear to be increasing each year according to the United States Geological Survey.

The most recent Criteria Document from the World Health Organization's International Program for Chemical Safety states in 1988 that no threshold has been identified for carcinogenic risks. This is consistent with the World Health Organization's earlier conclusion in 1989 that ``The human evidence has not demonstrated that there is a threshold level for lung cancer or mesothelioma below which exposure to asbestos dust would be free of hazard to health.'' The World Health Organization recognizes what NIOSH concluded 25 years ago in 1976, that ``only a ban can assure protection against carcinogenic effects of asbestos.''

Asbestos has been responsible for a massive epidemic of disease and death since its commercial exploitation, primarily beginning at the turn of the last century. As we enter the new millennium, we do not want to promote the myth, as is currently promoted by parties interested in the continued commercial exploitation of chrysotile, one of the forms of asbestos, that it was the other forms, the amphiboles, which were responsible

for the massive epidemic. Chrysotile, by the way, makes up about 98 percent of the commercial use of asbestos.

The fact that Austria, Belgium, England, the Czech Republic, Chile, Denmark, El Salvador, Finland, France, Germany, Iceland, Italy, Latvia, the Netherlands, New Zealand, Norway, Poland, Saudi Arabia, Sweden, and Switzerland have all banned asbestos leads us to recognize that these countries feel the safe use of all forms of asbestos is not attainable and that alternative materials posing less risk to public health are desirable.

The World Trade Organization, not known for its friendliness to environment and labor standards, has nonetheless recently upheld a panel decision recognizing France's right to ban chrysotile asbestos, finding sufficient scientific evidence for the ban. And it was just announced yesterday that Argentina is intending to ban asbestos in their country as well.

I would like to go on and say that while it is true that asbestos consumption has declined in the United States and Europe, sales to other countries, particularly Southeast Asia, South America, Eastern Europe, has increased based on its use in the construction industry.

Senator Murray. Dr. Lemen, please summarize, and you can submit your full testimony.

Dr. Lemen. I would like to summarize and complete my testimony to ask, with all the scientific data and knowledge about asbestos, why is it still allowed in commercial products for general consumer usage such as brakes, lawn products, cement pipes, and others? We have seen the toll on workers mining asbestos, manufacturing asbestos, and using asbestos-containing products. What will the toll on the American consumer be if asbestos continues to be allowed in commercially available products in American workplaces?

Now is the time for the United States join the growing list of nations that have banned the further importation and use of asbestos.

I would like to close by quoting the very eminent British public health statistician, Sir Bradford Hill, who said in 1965: ``All scientific work is incomplete, whether it be observational or experimental. All scientific work is liable to be upset or modified by advancing knowledge. That does not confer upon us a freedom to ignore the knowledge we already have, or to postpone the action that it appears to demand at a given time.''

The time is now, and the action we must take is clear.

I would like to say that I also have some material for the committee to look at that was purchased yesterday in Houston, TX. These are asbestos-containing gaskets imported from Brazil.

Senator Murray. Thank you, Dr. Lemen.

[The prepared statement of Dr. Lemen may be found in additional material.]

Senator Murray. Mr. Addison, please proceed.

Mr. Addison. Madam Chairman, thank you very much for allowing me the opportunity to speak to you this afternoon.

My name is John Addison, and I am an independent scientific consultant working in the field of mineralogy and health. I am actually a geologist by training. I was head of the Mineralogy Group at the Institute of Occupational Medicine in Edinburgh for about 15 years. The IOM is one of the foremost charitable research organizations in occupational health in the world.

My responsibilities there ranged from analytical measurement of dust in the occupational environment, including all of the asbestos minerals, to characterize asbestos and other minerals used in carcinogenicity testing and the determination of asbestos in human and animal tissue samples.

Over the last 20 years, I have been a member of the UK Health and Safety Executive Working Group, developing and drafting formal methods used for identification of asbestos in bulk samples and in airborne dusts. I am an internationally-recognized expert and have testified previously in U.S. Federal hearings with respect to the definition of asbestos, and in particular to the issues related to the nonasbestos forms of the amphibole minerals.

There are many complex issues involved in the measurement of asbestos in dust and bulk samples, but one of the most important distinctions that must be made is that between the asbestos minerals in the amphibole mineral group and their normal nonasbestos analogues. These are minerals that are effectively the same chemical composition but with subtly different crystal structures that lead to very different physical-chemical properties and different toxicological behavior.

These differences have led to the clear distinction being made between asbestiform amphiboles and their nonasbestos analogues in the regulatory framework for asbestos in the United States, in the UK, and in much of the rest of Europe.

One very important aspect of this issue is that all of the amphibole minerals have the property of forming crystal fragments that may meet the size definition of a regulatory fiber, but that does not mean that these fragments are asbestos, nor does it mean that they have the same toxicological properties as asbestos.

Within this context, it was entirely appropriate that the fiber counts performed by OSHA for regulatory purposes discriminated between the cleavage fragment fibers of amphiboles and true asbestos fibers. Such a distinction is not only appropriate, but it is essential for the proper regulation of large numbers of industrial rock and mineral processes within the United States and elsewhere since many of these contain amphibole minerals, and these will generate cleavage fragment fibers that meet regulatory size criteria even though they are not asbestos.

Having previously advised The Vermiculite Association, which is the international association of vermiculite miners and users, on issues related to amphibole and asbestos minerals, I was invited by Mr. Gumble of Virginia Vermiculite to assist him when it became apparent that there were possible asbestos outcrops within the ore body of the mine.

Over the last 2 years, I have spent 15 days working at the mine, inspecting the ore body, personally explaining to every member of staff the health effects of asbestos, methods of identification, airborne dust monitoring, and many other aspects of asbestos science.

I confirmed for Virginia Vermiculite that a tremolite asbestos did occur indeed as thin veins within the ore body, but these were not persistent and were only sparsely developed in terms of the whole mass of the ore. Since the thin tremolite veins could be recognized by an experienced operator, they could be removed when encountered and would not contribute to worker dust exposure during processing, nor would it finish up

in the product.

Even if the tremolite asbestos veins had simply been mixed in with the ore while it was being processed, it is unlikely that the tremolite asbestos would have been detected by conventional U.S. asbestos methods.

Other small occurrences of actinolite asbestos also appeared to be found at the margins of intrusive masses of granitic rock that are found cutting the main rock mass of the deposit. Once again, these asbestos occurrences were not persistent and were only sparsely developed. Since the granitic rocks have no value as a vermiculite ore, they would not normally be disturbed nor would there be any value to their processing.

Toward the end of my visits, I recommended that Virginia Vermiculite should request a visit from Dr. Malcolm Ross, probably the leading authority in the world on asbestos minerals, and formerly of the U.S. Geological Survey. He confirmed what I had found and furthermore suggested that such asbestos occurrences are widespread throughout the whole of the Appalachian Mountains and the Piedmont areas--not to say the Rocky Mountains and many other parts of the continent.

In these circumstances, it is almost impossible to absolutely exclude the possibility of asbestos occurring in any mineral or rock development, but that does not mean that all such developments should cease----

Senator Murray. Mr. Addison, if you could summarize quickly, I would appreciate it.

Mr. Addison. Yes. One more sentence. That does not mean that all such developments should cease, only that sufficient care and attention must be paid to properly manage the asbestos problems.

It is clear to me that in their considerable efforts to identify their problems, to manage the asbestos in their mine, and to minimize the possible health effects on workers, Virginia Vermiculite has set an excellent example and should be commended.

Thank you for your time.

Senator Murray. Thank you, Mr. Addison.

[The prepared statement of Mr. Addison may be found in additional material.]

Senator Murray. Mr. Biekkola.

Mr. Biekkola. Senator Murray and members of the committee, my name is George Biekkola from L'Anse, MI. I am 67 years old, and I have asbestosis.

I began working for Cleveland Cliffs Iron Company in Michigan in 1964. After almost 30 years on the job, I had to retire early because of my disability.

I like being able to do things for myself, but now I cannot mow the lawn because my lungs are damaged. I have only two-thirds of my lung capacity, and that is because my lungs are filled with asbestos fibers and have scarred from years of exposure. This puts a big burden on my heart, so I have to be careful not to exert myself too much.

I also have to be very careful that I do not catch pneumonia or any lung condition, because my lungs are not able to fight off infections.

I thought I would be spending my retirement traveling out West with my wife, hunting deer up in the mountains, but today I cannot. This is not how I thought I would be spending my retirement, but when I think about the other guys I worked

with, I guess I came out lucky. Like my friend Dale Roberts, an electrician. He was so excited to retire and could hardly wait to help his son run a portable sawmill. Six months later, he was dead of mesothelioma. Or my friend Joe Brogan--2 weeks after Joe retired, he was dead of asbestosis/mesothelioma.

Senators, I could give you more names--in fact, when I finally took the mining company to court a few years ago, I brought with me a stack of over 200 death certificates.

I am here today to tell you my story so that maybe somebody else working in a mine or a brake shop or a factor will not lose----

Senator Murray. That is fine, Mr. Biekkola. Just take your time.

Mr. Biekkola [continuing]. Will not lose the things I have lost.

Because it takes 20 to 30 years for the scarring in the lungs to show up on an x-ray, many people are not aware of the problem. Most Americans think asbestos is no longer a danger, but they are wrong. Today, asbestos fibers are still used in manufacturing and are still ruining the health of workers like myself.

Companies will tell you that asbestos is not a problem, just like they told me. Senators, they lied. We need to worry about asbestos. We need our Government to protect us.

In my job, I operated a hard rock drill. Often, I would drill through veins of asbestos and would breathe in the dust along with the rock dust. The safety equipment was limited. I also worked overtime in the kilns and crushers, where I was exposed to more asbestos.

Eventually, I learned how to repair electronic equipment around the mine. Often, that equipment was wrapped in asbestos. I have brought some examples of some gaskets and packing material and thermal-couple wire that I handled throughout my job.

In 1987, x-rays showed asbestos in my lungs, but the company doctor and the lung specialist told me not to worry about it.

In 1990, I went to see Dr. Michael Harbut. He told me a different story about asbestosis, and he told me to get out of the mine. I went back to the company with the doctor's report, but they told me, ``Your job is here. Be at work tomorrow,' ' and that was that.

Later, I went to the Mayo Clinic in Minnesota for several days of tests. I showed these results to the company's personnel man, and he laughed at me and told me I could throw my medical report in the garbage.

Because of my disability, I retired at age 60. Today I cannot do the things that I want to do for myself and my family.

In the coming months, many workers will be diagnosed with asbestosis. I just wish the company would be more responsive to those workers and their families and not wait until those workers have died.

Senators, please make sure that what happened to me will not happen to anybody else. Please raise the safety standards and keep a better eye on these companies. Workers like me are counting on you to protect us. Please do not let us down.

Thank you.

Senator Murray. Thank you very much, Mr. Biekkola.

[The prepared statement of Mr. Biekkola may be found in

additional material.]

Senator Murray. Dr. Harbut?

Dr. Harbut. My name is Michael Harbut. I am a doctor of medicine and a teacher at the Wayne State University School of Medicine in Detroit, MI. I am also a past chair of the Occupational and Environmental Health Section of the American College of Chest Physicians and am a board member, as was Congressman Bruce Vento, of the Mesothelioma Applied Research Foundation.

Each year, I have approximately 3,200 contacts with patients who are ill as a result of their occupational or environmental exposures. Hundreds of these patients have asbestos-related diseases or cancers. Most of them die before they were meant to. My remarks today, therefore, are not only from the perspective of a physician who knows that much of the sickness and death which he daily confronts was preventable; in honesty, I am also angry at the industry and its friends in high places who have allowed this carnage to occur.

I want to speak briefly about what asbestos fibers are and what they do when inhaled. It is quite commonly known that asbestos fibers cause scarring of the lungs and lung cancer; what is less commonly known is that persons with significant asbestos exposure have an increased overall death rate from all cancers.

Asbestos fibers are microscopic airborne needles which penetrate the delicate tissue of the lung and have been identified in every organ of the body. Anywhere from a handful of years to decades later, persons with asbestos-related disease develop a thickening on the covering of their lungs, their smaller airways become narrowed, and the membrane over which oxygen passes to the bloodstream becomes thickened, increasing the work of breathing. They become short of breath on climbing a few stairs; they cannot walk from the shopping center lot to the store without stopping; and before too long, any exertion can cause a profound shortness of breath. Many patients ascribe the symptoms to ``just growing old.'' If they do seek medical attention, the diagnosis of asbestosis is rarely rendered. There are several reasons for this.

First, even for trained physicians, it can be a tough diagnosis to make. Notwithstanding the mass tort litigation where an asbestosis diagnosis may be less than reliable, a real asbestosis diagnosis made by a real doctor just does not happen that often. One reason is that sometimes there are problems in identifying the asbestos fibers, one of the reasons why we are here today.

Even if a patient has all the clinical signs and symptoms of asbestosis, there is sometimes inadequate data to confirm the presence of what the Government has decided constitutes an asbestos fiber. These are sometimes called asbestiform fibers, and in some cases, the inhaled dust may contain a percentage of asbestos below what was previously believed to be harmful or may be regulated as a ``particulate not otherwise classified.''

To illustrate this, please see the x-rays I have brought. The first demonstrates a normal lung; the second, a patient with early but definite asbestosis. It is those white lines that look like dust that represent the asbestos scars.

You will see that the third is quite similar to the second, demonstrating what appears to be early, definite asbestosis, but when we asked this patient's left lung after it was transplanted, we found no asbestos fibers, but we did find a

number of ``cousins'' of asbestos. This x-ray also shows what the inhaled dusts have done to the surviving lung over a period of 10 years.

If you take a look at the film on the right, it shows the natural course of asbestos in the patient's right lung. It is a massive scarring. Fortunately, the left lung is transplanted.

The fifth film shows what appears to be an early but definite asbestosis in a mine from Michigan's Upper Peninsula. He was not given this diagnosis by the courts, however, because his exposures fell below MSHA's notice.

The next film shows an advanced asbestosis in a steelworker, and the last demonstrates asbestosis in an autoworker who made brake shoes.

Diagnoses are also not made for insurance reasons. Once a patient receives a diagnosis of asbestosis, it is a fair bet the doctor and the hospital will have a very hard time getting paid for care. The patient can be thrust into a compensation system which rarely rules in his or her favor, and the patient's ability to acquire health or life insurance is severely impaired.

So not only have these patients been assaulted by the fibers, they are assaulted by the law. They are also assaulted by funding policies for research. As an example, for every six breast cancer deaths, the National Cancer Institute is funding a study. There is one study funded for every 80 mesothelioma deaths. Mesothelioma is the relentless cancer of the covering of the lungs and intestines caused by asbestos which is usually found at autopsy, but when discovered before death, confers an average life expectancy of 6 months--a death from a fiber inhaled 40 years earlier.

In my remaining moments, I would like to make a few suggestions which I think would help alleviate illness, suffering, and preventable death in our generations and those of our children.

First, the Government should convene a panel of scientists and clinicians who know a lot about asbestos, its cousins, and the disease they cause. One requirement of membership of physicians would be that they have treated at least 100 persons with asbestos-related disease over the previous 5 years. The panel would study all diseases which present clinically, as does the 2001 brand of asbestosis. The panel would also look at the health, compensation, and insurance issues growing out of asbestos and asbestiform exposures.

Finally, the Government should immediately encourage the refocus of at least some of its resources on the prevention, early diagnosis, and someday cure of asbestosis and mesothelioma. Prevention actually is an easy one--just ban the use of asbestos in the United States, as have nations all over the world.

For decades, the society, the courts, and much of the Government have regarded asbestosis as a legal inconvenience. My patients and I ask you to understand that to them and their families, asbestosis means disease and death.

Thanks very much for inviting me, and thank you for having these hearings.

Senator Murray. Thank you.

[The prepared statement of Dr. Harbut may be found in additional material.]

Senator Murray. Dr. Whitehouse.

Dr. Whitehouse. Thank you, Senator Murray.

My name is Dr. Alan Whitehouse. I am a chest physician and pulmonologist from Spokane, WA. Spokane is 160 miles from Libby and is the primary referral source for patients with lung disease from the Libby area. I have been privileged and saddened to have taken care of many people from Libby who have asbestosis.

Libby, as you know, was the site of the W.R. Grace Corporation vermiculite mine. Vermiculite is an insulating compound very commonly used for insulation, soil conditioning, and in fertilizers. The ore body of the W.R. Grace mine contained up to 27 percent tremolite asbestos.

Tremolite is a highly toxic asbestos that is a contaminant with no commercial value. The insulating material is produced by heating the ore, or ``popping'' it after attempts are made to separate the tremolite asbestos from the ore body itself.

Unfortunately, all the tremolite cannot be separated from the vermiculite. Both the partially refined ore and the finished product, known as zonolite, were sent throughout the country. The ore was sent to approximately 60 expansion plants to be made into insulating material, as you have noted up there on the slide.

The finished product contained significant quantities of tremolite asbestos and was shipped throughout the country for various forms of insulation from both Libby and the 60 or so expansion plants.

Asbestosis, as you have heard, creates an intense inflammation in the lining of the lung and produces fibrosis and scarring within the lung itself. There is a latency period from the time of exposure of anywhere from 15 to 40 years from the time of last exposure.

All this scarring prevents the lungs from expanding and prevents gas exchange of oxygen and carbon dioxide. People who have progressive asbestosis die of a variety of illnesses. About 3 percent in the Libby series will die of mesothelioma, which is a cancer that you have heard about; many will die of respiratory failure, which is basically a form of suffocation due to an inability to oxygenate your body. The incidence of lung cancer is up to seven times expected from the general population.

Unfortunately, vermiculite with this contaminant, tremolite, was scattered throughout the entire Libby area. It was present around the expansion plant, which was right near downtown Libby; it was present along the rail lines; it was used throughout the community as a soil conditioner, placed on the playgrounds of the schools to help condition the track; it was placed on the ball field and was worked regularly to keep the ground suitable for playing baseball. It was available free to the community to use in attic insulation, and many of the homes in Libby are insulated with vermiculite. Children played in the piles of vermiculite for many years.

These were all fairly heavy exposures to asbestos, but unfortunately, there is also a significant number of people who have asbestos-related disease in whom the only source of asbestos that you can find is that they lived in Libby, MT and neither played in it as children nor were employed by Grace, nor lived with families of miners.

Through the years, especially since 1980, I have seen a number of miners who worked in the plant who had asbestosis. It was thought until the last 5 to 7 years that this disease had been confined to the miners and their families. In the last 5

years, I have seen an alarming number of patients who had no direct exposure to the mine or to the miners, who have asbestosis but obtained the disease from just living in Libby, MT. These include the children who played in vermiculite, rail workers, loggers who had logged around the mine property, men who worked in the lumber mill where they had used vermiculite on the plywood dryers, people who lived next to the expansion plant and storage bins, and people who just lived near downtown Libby who could not be identified as having any significant other exposure.

I have been collecting a database for a number of years and currently have 396 cases in the database. They range all the way from patients with a few pleural plaques to people who have died of this disease. One hundred three of this, or approximately 25 percent, are people who have never worked for Grace and whose exposure was environmental only in Libby. Twenty-four of my patients have died in the last 3 years, and five of these were people who only had environmental exposure.

It is clear from the data that I have that people can obtain severe asbestosis with what would appear to be relatively minimal exposure.

The current EPA/CDC screening program of 6,000 residents of Libby has turned up between 20 and 30 percent abnormal x-rays. There will likely be another 1,500 people with abnormal x-rays added to my 400, and they are going to screen another 2,000 to 3,000 people this year.

Asbestosis is a progressive disease. It is not known whether everybody with pleural plaques will develop severe disease or not. It is clear that over 100 of my patients have severe disease, and about 75 percent of my patients with even mild disease are having progressive loss of pulmonary function, taking into consideration the changes in their function that goes with age. This 75 percent are losing approximately 3 to 5 percent of their lung function per year over and beyond what would be expected from aging. These are people with mild disease who were exposed in the sixties and seventies and now have reached the point in the latency period to start progressing rather rapidly.

It is clear that you can get asbestosis from what was thought to be a minimal exposure. Tremolite is considerably more toxic than chrysotile and may not take nearly as much exposure to get severe disease.

Tremolite is present in many places throughout this Nation in the attic insulation where Zonolite was used. It is unclear how severe a problem this is, although I have one patient with asbestosis whose only exposure was home insulation.

It does not appear from the data we have from Libby that there is anything such as a safe level of airborne asbestos. It may well be that we are still contaminating large numbers of people nationwide, particularly with tremolite, without actually knowing it.

I will conclude by saying the following. The W.R. Grace Corporation was very well aware of the extent of this asbestos contamination throughout their ownership of the mine. There are probably many similar places in this country where a significant amount of exposure is contaminating, especially the 60 expansion plants, and I have cases from Great Falls, from California, from Spokane, and I know of cases from Minneapolis, all related to that.

Because of this long latency period of asbestosis, it is

likely that we will continue to see new cases until at least the year 2030 if we banned asbestos at this point in time.

Thank you.

Senator Murray. Thank you, Dr. Whitehouse.

[The prepared statement of Dr. Whitehouse may be found in additional material.]

Senator Murray. Mr. Pinter.

Mr. Pinter. Members of the Senate, ladies and gentlemen, my name is David Pinter of Louisa, VA.

Before I quit 2 months ago out of fear for my health, I worked for Virginia Vermiculite for more than 22 years. I was a heavy equipment operator and mechanic and worked every day excavating and loading vermiculite for processing at the plant. I also loaded and distributed the waste rock that was left over at the end of the processing, and several times a week, I hauled the processed ore through the town of Louisa to dump it at an uncovered stockpile near the middle of town, or I loaded it onto a boxcar to be shipped all over the country.

Every day I worked in clouds of dust doing each part of my job. Some days the dust was so thick I could barely see. Never in 20 years was I given any protective clothing or respiration equipment.

When I would excavate the vermiculite to begin the processing, I would see veins running everywhere through the ground of whitish-gray fibrous material that was much lighter than the surrounding rock and sometimes almost fluffy in consistency. A lot of this fibrous material ended up in the waste rock, and a lot of it ended up going into the process that put it into the downstream product.

I have samples of this stuff in the jars here in front of me, as you can see.

For as long as I can remember, there have always been rumors in our community that the vermiculite that we were handling was contaminated with tremolite asbestos.

The company owners assured the workers and the people of the community that this was not true and that we were safe. No one thought the company would lie to us, especially since one of the owners was former Deputy Administrator of the EPA for Air and Water Safety in the Nixon administration.

As a result of all this, we put our fears aside and continued to work unprotected.

I know now that the tests conducted by W.R. Grace Company going back to the 1950's showed heavy concentrations of tremolite asbestos in the Louisa deposit. W.R. Grace controlled the deposit before Virginia Vermiculite took it over.

Only 20 percent of the material we dig up becomes usable vermiculite ore. That leaves 80 percent of every ton of excavated earth as waste rock that is accumulated at the plant site. Each year, we produce up to 50,000 tons of vermiculite. This leaves 200,000 tons of waste rock that must be disposed of annually. The management of Virginia Vermiculite decided that a good solution to this problem would be to give it away to the public as free gravel.

For 22 years, I watched people come in with their own trucks to be loaded with this waste rock, or management would send dump trucks full of waste rock out each day to be dumped on people's driveways, parking lots, public areas such as the local library and the fairgrounds. Usually about 100 to 300 tons of this material was given away every day. As I told you before, all this waste rock contained large quantities of

white-grayish fibrous material.

In the fall of 1999, I began to see all the news about how the vermiculite workers and their families were dying in Libby, MT from exposure to tremolite asbestos. This scared all the workers at the plant, but management continued to tell us that we had nothing to worry about and that there was no tremolite in the Virginia deposit.

Some months later, an inspection team from MSHA showed up to check for asbestos exposure. They seemed shocked at what they found. I heard someone say, ``This looks more like an asbestos mine than a vermiculite mine.''

It turned out that the white-gray fibrous material that we had been working in for all these years was indeed tremolite asbestos--the same as the Libby, MT plant--and citations were issued against the company because of the worker exposure.

MSHA's tests later showed the tremolite to be in a concentration of up to 99 percent. The inspectors said the workers needed to be in protective clothing, use respirators, have dust-free cabs on all equipment, and have onsite showers and other decontamination equipment provided. They also made management put red flags and orange cones out to mark the dozens of veins of asbestos that criss-crossed the property. These veins range in size from less than an inch to one which is 6 feet high and 2 feet wide. Usually, the best-quality vermiculite is under and around these deposits of asbestos.

Management was visibly annoyed at having these rich parts of the deposit off-limits.

As I understand it, management told MSHA they agreed to all of MSHA's safety requirements. However, management actually ignored the safety requirements, and most of them have never been carried out. The red flags and orange cones were set out to mark the asbestos veins, but no protective clothing or respirators were ever issued to the men, and there is almost no protective equipment in place.

Since January, however, MSHA and the EPA seem to have lost interest in the tremolite asbestos problems at Virginia Vermiculite, and management seems to appreciate this. For example, on Inauguration Day 2001, the bosses at the plant were joyful and ordered all the red flags and orange cones removed from the barricaded areas where the asbestos veins were, and the workers were told to excavate through the asbestos veins as they always had before. I have a couple of photographs here, if you are interested.

When the plant manager ordered this, I heard him say: ``We do not have to worry about MSHA anymore. From now on, they will be behind us every step of the way. They will not cause us any more problems.''. Once again, all the tremolite went into the product for downstream consumers of garden and lawn products, medicated powders, fire board, brake shoes, aggregates, and numerous other common products.

Everyone talks about what a tragedy Libby, MT was and how it can never happen again. Well, it is happening right now. It is happening under your noses just 2 hours from where you are sitting. We are not dead yet, because the mining in Libby began 25 years before they started in Virginia--but it is coming.

The end of the incubation period for asbestos disease is almost at hand. All the plant workers since 1978 have been exposed, and hundreds of people in the town and county are being exposed daily. It is probably already too late for most of us, but you need to shut this mine down and require the

company to thoroughly decontaminate the mine and mill site. You also need to require the company to disclose every location where they spread their waste rock and to clean up those sites, too. This is the only way to protect all those who have been exposed and do not know it.

Thank you for your time. I have appreciated coming here.

Senator Murray. Thank you very much, Mr. Pinter.

[Applause.] We will not have any outbursts from the audience, please.

[The prepared statement of Mr. Pinter may be found in additional material.]

Senator Murray. Mr. Gumble.

Mr. Gumble. Senator Murray, my name is Ned Gumble, and I am the manager of Virginia Vermiculite. I have been there since it was first started in the late seventies, and I am familiar with all aspects of its operation.

We got into business and our deposit was brought on line as a result of the Libby situation and customers opting to or stating that they would not buy Libby material ever again.

We currently meet the OSHA airborne standard of 0.1 fibers per cc for all workplace exposure, and even though we are regulated under MSHA with a two-fiber standard, we apply the OSHA standards in our own continuous testing program.

As an attachment to my testimony, I have included a history of all of our OSHA airborne monitoring.

With regard to the allegation on the rocks spread throughout the community, as a result of this MSHA inspection which we received late last fall, other agencies were called in to take a look at exposure possibilities within the community, and EPA sent a team in--they have been there several times--not only to monitor or take a look at potential asbestos contamination in this waste rock, but they also did a parallel study to that work which was done in Libby in terms of sampling dust in surrounding homes.

EPA results on numerous rock samples throughout the community--no asbestos detected. The parallel study on dust samples--no asbestos detected.

As a point of reference, when EPA did their test work in Libby, MT looking at dust exposure in the town of Libby, they found exposures and quantities of tremolite in 11 out of 32 homes. Mind you, these homes are miles away from the mine. When EPA came to Virginia to test in our area, the closest home is within 100 yards of active mining activity, and there was no asbestos detected.

In addition, we have undergone a set of health screening for all of our employees recently. Last year, our employees received lung examinations by the University of Virginia Health System, their Division of Pulmonary and Critical Care Medicine. The results of these examinations are also included as an attachment and were negative for all employees tested. Mr. Pinter refused to participate.

We do have occasional thin veinlets of fibrous material in our deposit. We brought in Mr. Addison to address this issue, as he suggested, and based on that consultation, he spent time going through our entire deposit and advised us on procedures for dealing with these minor occurrences and also thoroughly trained all of our employees on asbestos issues.

To step back in time, in August of 2000, we received the third investigation into our operation by the Mine Safety and Health Administration in the year 2000. This investigation was

allegedly triggered by an employee complaint. As a result of that, MSHA found no violation of MSHA's or OSHA's employee exposure standards. However, MSHA did release prematurely inaccurate results to the Seattle Post Intelligencer regarding this investigation. At that point, MSHA gave us two ``housekeeping'' citations regarding asbestos. At this time, MSHA took samples of our product and found no asbestos in our vermiculite products. In their prior two visits that year, they also sampled our product and found no asbestos detectable in our vermiculite products.

Once MSHA reviewed the appropriate test results that it did have in its possession in September of 2000 but withhold when they released the results to Seattle Post Intelligencer, and when they retested our operation later in 2000, they withdrew those citations. I have included also as an attachment a chronology of all these events as well as communications with MSHA in this regard.

I guess in closing, I would like to say several things. First of all, I would like to supplement my testimony with a letter from our employees who have had the opportunity to review Mr. Pinter's allegations against us. That will be a supplement.

Second, I would like to make a very brief point about our product. You today, as well as other Senators and panel members, have spoken about asbestos banning and what we might do in this country in that regard. For the last 5 years, we have been shipping material to Denmark, one of the countries named which has banned asbestos products. Every time we ship to that country, we send a composite sample of the shipment which is precertified by their Institute of Occupational Medicine. We have never failed in getting a shipment certified in Denmark.

Second, I guess I would like to speak from the heart for a minute and put a little perspective on Libby, MT, which I think has been lacking here.

EPA did a study on asbestos concentration in Libby, MT in the late eighties. It is also an attachment to my testimony. You will find in there that they cited asbestos concentrations in the ore fed to their plant up as high as 20 percent, which I think is high. On average, I understand the number is 2 to 3 percent, but that is the quantity of asbestos interspersed throughout that entire deposit.

In Virginia, we have some discrete veinlets of material, the sum total of which would not fit on my briefcase from a surface area standpoint.

Senator Murray. Mr. Gumble, I have allowed you to go two and a half minutes over time. If you could summarize now, I would appreciate it.

Mr. Gumble. OK. Test work of the quantity of fibers in our raw material is less than 10 parts per million, some 2,000 to 3,000 times less than in Libby, MT. As an attachment, I have also listed information showing historical fiber exposures to employees in Montana, and those exposures were based on a NIOSH study done in the late eighties. Exposure levels in the fifties and sixties were in the hundreds of fibers per cc.

Senator Murray. Please sum up.

Mr. Gumble. We have adopted a standard of 0.1 fiber per cc.

Senator Murray. Thank you. You can submit your entire testimony, Mr. Gumble. Thank you very much.

Mr. Gumble. Thank you.

[The prepared statement of Mr. Gumble, with attachments,

may be found in additional material.]

Senator Murray. I have several questions, and then I will turn it over to Senator Reed for his questions.

Mr. Gumble, let me just ask you, isn't it true that since MSHA conducted its inspection last August, your company, Virginia Vermiculite, has acknowledged the presence of tremolite asbestos at your mine?

Mr. Gumble. Yes, that is true. I mean, we acknowledged it prior to MSHA.

Senator Murray. In your testimony, you said that MSHA withdrew its citations. Wouldn't it be more accurate to say that MSHA entered into a negotiated settlement with your company which included your company taking additional measures to protect workers?

Mr. Gumble. Yes. They vacated the citations as a result of that; correct.

Senator Murray. As a result of the negotiations; thank you.

Mr. Addison, you are a spokesperson for Virginia Vermiculite; correct?

Mr. Addison. I am an independent consultant with interests related to the vermiculite industry in general as well as many other industries.

Senator Murray. I was curious--you are from the United Kingdom, and they have banned asbestos. Do you find that peculiar?

Mr. Addison. We have a prohibition on asbestos, and I am not here to argue for or against the prohibition on asbestos. But I would say that to some extent, a prohibition on asbestos might be just as effective as, for example, a prohibition on carbon dioxide. Asbestos is a natural material that occurs in the environment, almost everywhere on the surface of this planet, so to ban it in the strict sense is pointless. You may prohibit its use in certain materials, and I would support that.

Senator Murray. Dr. Lemen, let me ask you a question. How do you explain the fact that the United States still has not banned asbestos or contact with asbestos, unlike so many other countries in the world?

Dr. Lemen. I firmly believe that the United States should ban asbestos, and they have had the opportunity. Unfortunately, when EPA took that step, and it got into litigation, it was overturned by a Federal court. I think that the U.S. Government should follow the rest of these countries and immediately go into action to ban the use of asbestos in consumer products and the importation of asbestos, and I think the United States is very far behind the line in doing this action.

Senator Murray. Thank you.

Dr. Harbut, right now, the Federal Government only regulates six forms of asbestos. Would you recommend that the Government expand its definition, and if so, could you tell us how?

Dr. Harbut. Sure. I think, my suggestion is that a committee of very informed people about asbestos-caused diseases and those diseases which look like asbestos or asbestosis, which are excluded from the definition because of governmental fiat adopted in the last 30 years, should be looked at. And the diseases should be judged from their clinical presentation, pathological presentation, and back up from there, and then determine what minerals cause the illness.

I also agree that the fibers should be banned. If I may, I

thought Mr. Addison was making an argument for the legalization of marijuana there for a moment--it is a natural substance, it grows on trees, it occurs in the environment. I think that that argument does not hold water. There are many, many naturally-occurring substances ranging from arsenic to asbestos which are known to poison people, so I think a ban is certainly not unreasonable, number one, and number two, I think that the definition should be broadened.

Senator Murray. Thank you.

Dr. Whitehouse, you have talked about your treatment of a number of people who were exposed in Libby, MT, and we heard Senator Baucus talk earlier about the tremendous personal grief that has occurred in that community. In your opinion, what should Congress and this administration do to ensure that what happened in Libby, MT never happens again?

Dr. Whitehouse. I think that first, they should ban the use of asbestos in consumer products and in most products--there may be some special uses, but for the most part, it should be banned.

I think there should be a regulatory effort concerning all these contaminants that may be present in other compounds. What Dr. Harbut said about diseases that look like asbestosis probably are various forms of asbestos-related diseases, but may be similar compounds, and in fact some of the cleavage fragments that were discussed may be problematic as well. So I think the Government should regulate this stuff very tightly; this is obviously present throughout the country.

Senator Murray. Thank you.

Mr. Pinter, just to give you a chance to respond--did things change at the mine after MSHA issued the notice of violations last August?

Mr. Pinter. Not that I know of, ma'am. The only thing that I saw that they did was verify the veins of asbestos. And they were supposed to comply with full-quality air control cabs, and when I left, there were only two pieces of equipment out of about 20 that had any environmental cabs on them; and we never did get any respirators. The only thing we were issued was 3M dust collector respirators, which State on them that they are not for asbestos use. No showers--well, they have one shower there, but it is not a decontamination shower--no protective clothing. It just went on like they usually mined, so they never really did do anything that MSHA suggested.

Senator Murray. Thank you.

Mr. Biekkola, when did you first suspect that you were being exposed to asbestos at Cleveland Cliff Iron?

Mr. Biekkola. Probably in the mid-sixties.

Senator Murray. So 30-some years ago.

Mr. Biekkola. Yes.

Senator Murray. Mr. Pinter, you have worked 22 years at the mine?

Mr. Pinter. Twenty-2 years and 3 months.

Senator Murray. Did you ever wear protective equipment?

Mr. Biekkola. When the room or the building got so white, dusty, and cloudy that you could not see the lights very well, they would come out with the cloth respirators, which we know today are not adequate for filtering asbestos fibers. And then, if you could find the box, it was loaded with dust, and you did not want to use it anyway.

Senator Murray. Did you ever worry that you might be bringing that home to your family?

Mr. Biekkola. We had showers right at work, but yes, there was a thought of the clothing that we would bring home daily or every other day to get cleaned up. And they did not furnish any protective clothing other than a pair of gloves; that was all.

Senator Murray. Senator Baucus discussed a number of families--Dr. Whitehouse, I assume you know the same--workers who brought asbestos home from work and infected their families, or children who played in the vermiculite in schoolyards, etc. You mentioned a number of your friends who have passed away. Did any of their families have that kind of exposure?

Mr. Biekkola. In that area, the doctors would not even mention that the miners were asbestos victims. They did not want to----

Senator Murray. The doctors that you went to?

Mr. Biekkola. They did not want to. It was a closed--they never talked about it.

Senator Murray. Dr. Whitehouse, can you explain that?

Mr. Biekkola. There are very few asbestos cases listed out of--there are three mines up there, and it is heavily mined, and there are heavy, heavy deaths.

Dr. Whitehouse. Actually, in Libby, the first time that Grace was told about the asbestos was actually--or, actually, the original Zonolite Corporation was told in the fifties about people with abnormal x-rays. The radiologists in Libby were aware of the problem and tried to bring it to their attention for a long time. A physician by the name of Dr. Rick Irons tried to bring it to Grace's attention in the late seventies and basically left town because of all the clamor that occurred over that.

I think the doctors were aware of it, but I don't think they recognized the significance of it at the time.

Senator Murray. I see.

Senator Reed?

Senator Reed. Thank you very much, Madam Chairman.

Mr. Addison, you have examined closely the Virginia mine. Have you ever had the occasion to examine the mines in Libby or in that area?

Mr. Addison. No. I have seen the material, and I have seen analytical reports, and I recognize the description of 28 percent asbestos in material prior to processing and 2 to 3 percent after processing in Libby. That is so different from the situation in Louisa that it just does not bear comparison.

Senator Reed. It is different in the concentration of the asbestos--that is the key difference?

Mr. Addison. Not just the concentration but the distribution of the asbestos.

Senator Reed. In terms of the veins that run through.

Mr. Addison. My understanding is that Libby had a pervasive asbestos content throughout the whole ore body. That is not the situation in Louisa, where it is constrained to discrete veins.

Senator Reed. Right, but you are making some inferences since you have not examined Libby specifically.

Mr. Addison. I am relying upon descriptions of the Libby ore that I have seen in the literature.

Senator Reed. Dr. Whitehouse, you seem to suggest in your testimony that, from your research and your data, there is no safe level of exposure--at least, that is the inference I received. Is that a fair inference from your testimony?

Mr. Addison. Basically, in a sense, I guess it is, because

I have a fair number of patients from Libby for whom I cannot find the exposure. I know they have asbestos. Their exposure--they did not play in the ball fields, they did not play on the railroad tracks, they did not have it in their homes, they did not have it in their garden--they only lived in Libby. There must have been a period of time when there was significant airborne exposure in Libby which does not exist now.

I would tell you that what Mr. Addison said about levels of asbestos in the mine and in the finished product are accurate from what I know also, that it was 2 to 3 percent in the shipped material.

Basically, then, if you do not know what the number is that it takes to get this, and you have a disease that takes 30 years to show up, the only safe course is to say ``I do not want anything to do with it.''

Senator Reed. But let me ask the question: Given what you have seen from Libby and given the fact that there is a difference certainly in the concentration and maybe the distribution, you would be at least suspicious of the potential development of significant asbestosis around the Virginia mine; is that fair?

Dr. Whitehouse. I do not have enough information that I would even want to comment on that.

Senator Reed. Fine.

Dr. Lemen, from your perspective, or Dr. Harbut?

Dr. Lemen. I would say that given the situation around Virginia, they can expect, in my opinion, maybe not the magnitude of Libby but a similar situation to occur after sufficient latency for disease to develop. And I think that to cease that mining situation would be the only alternative way to prevent that.

Senator Reed. Dr. Harbut?

Dr. Harbut. The only thought I have is the following. You have to remember that OSHA permissible exposure limits are negotiated limits between a number of interested parties, and they are adopted knowing that some people will get sick at those levels.

Senator Reed. I will just raise another question, which is that a lot of this is the definition of how much exposure is valid, etc. Can you comment, Dr. Harbut, Dr. Lemen, and Dr. Whitehouse--should we be moving to a more rigorous standard by OSHA--or, MSHA in this case--and you might also comment on the contrast between MSHA and OSHA--different standards, same Government.

Dr. Harbut. That is an extremely good point. I think part of the issue is that much of the asbestos discussion over the last 3 years has been sort of politically and economically motivated, at least in its details, rather than health and disease motivated.

My suggestion would be to look at the disease processes, look at the other issues surrounding the pathophysiology of exposure to the asbestos fiber, or asbestiform fibers, or fibers which behave like asbestos, and work from there, rather than identifying the fibers and working backward to its human health effects. It is a lot easier to identify people who have had exposure who are sick and their disease processes and trace back than it is the other way around.

That having been said, I think that the MSHA levels are definitely way too high, based on--I examined a couple hundred miners in the Upper Peninsula of Michigan 10 years ago, and we

found a penetration in these high-seniority miners of about 60 percent with asbestosis. MSHA identified no asbestos that broke any rules in any of those mines. So we basically had a case of people with asbestosis, but because MSHA said the asbestos was not high enough to worry about, I guess they did not.

Senator Reed. Dr. Lemen?

Dr. Lemen. When I was at NIOSH, we tried to get MSHA to lower their standard to come into compliance with what the OSHA standard was. NIOSH in 1976 recommended the 0.1 based on the fact that we knew that it still would cause disease, but we said that a ban was the only way to eliminate disease. NIOSH said that 25 years ago. For MSHA to continue with their standard is outrageous, and a lot of mines are going to develop disease as a result of that.

Senator Reed. Dr. Whitehouse, do you have a comment about the definitions and the standards?

Dr. Whitehouse. No, not really. I am not much of a mineralogist. I am more of a practicing physician, so I do not deal very much with levels. I basically agree with Dr. Harbut and Dr. Lemen, though.

Senator Reed. I am tempted to talk about kidney stones, but I will not.

Thank you all very much. I want to thank Mr. Biekkola and Mr. Pinter for their testimony, and Mr. Gumble as well. It is extremely difficult to come up here and talk about an issue which is highly personal--your company, your lives, your positions--and we all appreciate it, because you add something very important, an element of immediacy. Expert witnesses are helpful, but they do not have that sense of immediacy, so I thank you.

Senator Murray. Thank you very much, Senator Reed.

We will include a statement from Senator Kennedy for the record.

We also have statements from Senators Wellstone and Clinton.

[The prepared statements of Senators Kennedy, Wellstone, and Clinton follow:]

Prepared Statement of Senator Kennedy

I commend Senator Murray for calling this hearing on the dangers of asbestos for workers and consumers and this important issue of workplace safety. As we all know, exposure to this substance causes asbestosis, an often fatal breathing problem. It also causes lung and other cancers.

The vast majority of Americans believe that asbestos was banned many years ago. In fact, it is estimated that 3,000 different types of commercial products--from paper products and brake linings to floor tiles and insulation--still contain asbestos. Day in and day out, countless men, women, and children are still being exposed to this deadly substance, with serious consequences for their health and their very lives.

Clearly, we need to do more to guarantee the protection that is long overdue from this serious public health danger. Our colleague, Senator Baucus, will testify today about a particularly troubling case. Hundreds of miners, their family members, and other citizens of Libby, Montana have become sick or have died from exposure to the asbestos that contaminated the ore in a local mine.

The contamination that started in Libby didn't end there.

The ore was shipped to processing facilities throughout the United States, including a plant that produced attic insulation in Easthampton, Massachusetts from 1964 to 1984. Last month, nine of a dozen soil samples collected at the site showed detectable levels of asbestos. Five of the samples had levels significantly higher than one percent, the maximum level that EPA says is acceptable.

Asbestos is obviously a continuing national problem that affects all our states. I welcome this hearing, and I look forward to the testimony of our witnesses.

Prepared Statement of Senator Wellstone

Madam Chair, I want to thank you for organizing these hearings today. We are focusing today on a deadly serious problem--exposure of workers and other members of the public to serious health risks from exposure to asbestos.

As Chair of the Subcommittee with jurisdictional responsibility for protecting worker health and safety, I am extremely concerned about the problems of asbestos contamination in the workplace. I also know first-hand, from the experience of residents in my home State of Minnesota, how far the tentacles of asbestos contamination can reach. Thousands of residents in Minneapolis are potentially at risk from a facility that processed asbestos-laden vermiculite from the W.R. Grace Mine in Libby, Montana. And, unfortunately, this is only one of many sites around the country experiencing this dreadful contamination.

We must do everything we can to end this devastating problem. asbestos contamination is not a thing of the past--far from it. Asbestos contamination is real. It is killing and injuring countless numbers of people.

I welcome the opportunity to hear today from the Federal Agencies responsible for addressing the problem of asbestos contamination. I will listen with interest to their suggestions for how we can rationalize our regulatory framework for dealing with asbestos contamination. It is difficult to understand, for example, why the Mine Safety and Health Administration should have a standard that is 200 times weaker than that used by the Occupational Safety and Health Administration. And I want to hear from this Federal Panel about the training on asbestos-related issues that they believe it is important for their inspectors to have. It's also important for us to hear whether our laws are currently tough enough to deal with this deadly problem--or do we need legislation to help us put an end to asbestos contamination in our workplaces, our homes, and our neighborhoods.

I also look forward to hearing from our panel of workers and scientific experts. It is terribly important that we--and the American public--understand the full impact that asbestos contamination can have. This is not an abstract problem. Asbestos contamination causes tremendous harm--we need to tell that story.

And we need to know how it could have happened that in many work sites the problem of asbestos contamination escaped discovery for so very long--and with such deadly affects. How could so much time have passed without workers and residents being notified of the risks associated with asbestos. how can we avoid such a public health disaster in the future?

Madam Chair, again I commend you for organizing these

important hearings. and I look forward to working with you on much needed solutions.

Thank you.

Prepared Statement of Senator Clinton

I would like to thank Senator Murray for requesting and chairing this hearing today on the important issue of asbestos contamination and workplace safety. Senator Murray's leadership on this issue is to be applauded.

Sitting on both the HELP committee and the Committee on Environment and Public Works, I have come to appreciate the impacts our environment can have on our health and the health of our families--whether it is the air we breathe, the water we drink, the food we eat, the products we use. And whether we are talking about the general environment around us, our home environment, our work environment, or our children's school environment--these can all, without a doubt, have an impact on our health.

I don't think I have to tell anyone here how much skepticism there is out there when it comes to environmental health issues--and rightfully so, in many cases. The problem often is that we don't have enough information. We don't have the facts we need to make concrete connections between our health and the things in our environment that may be making us sick.

I am pleased to say that we are making progress in this area. With the mapping of the human genome, and other new genetic and scientific tools we've recently developed or discovered, we are now on the verge of making some major environmental health discoveries. And it is only then, when we are able to replace the fear with the facts, that we will truly be able to tackle our most pressing environmental health challenges.

Now, the topic of today's hearing--asbestos--is somewhat different from a lot of other environmental health concerns. Because in the case of asbestos, there are clear, indisputable links that have already been identified between asbestos exposure and human health. We know for a fact that exposure to asbestos causes asbestosis, mesothelioma and other lung cancers, and pleural plaques.

In fact, elevated death rates for lung cancer in coastal areas of Georgia, Virginia and northeastern Florida and Louisiana were linked to shipyard workers' exposure to asbestos during World War II.

We were able to make this connection between asbestos exposure and elevated cancer rates in these shipyard workers because we had good cancer data. And we had that data because we were tracking cancer incidence rates.

I think we need more tracking efforts like this in order to be able to better identify and address environmental health risks. That is why I have put forward an eight-point plan to address our environmental health challenges, including:

- <bullet> Establishing a national tracking system for chronic diseases that may be linked to the environment;
- <bullet> Placing environmental health officers in every state's public health department; and
- <bullet> Creating a chronic disease rapid-response force that would bring environmental, scientific and health experts into potential disease clusters, including those revealed by

the national tracking system.

I plan to introduce legislation to create a national health tracking network with my colleague Harry Reid and others after the recess. And I am hopeful that we will have a hearing on these broader environmental health issues in this Committee. We have already had two such hearings in the Environment Committee--one in Fallon, Nevada, and one on Long Island.

The key is, however, that once we have the information, once we know that there is something in our environment that is making people sick, we need to properly address that threat to human health.

Most people believe that we've taken care of the asbestos problem--that it is a problem of the past. And why wouldn't they? As I mentioned before, we know asbestos causes cancer and other health problems, so of course we must be taking care of it. Right?

Well, I look forward to hearing from today's witnesses about whether or not we are doing all that can and should be done to address the environmental health threats posed by asbestos exposure.

While I know that we are taking a number of steps at the federal level, I am concerned that we may not be doing enough. And I am not just concerned about the workplace, I am also concerned about schools and whether they are safe for kids--including threats posed by asbestos in older, ``sick'' schools around the country.

I believe we need more information about all of the possible health and educational impacts that school environments have on our children. I was pleased to pass an amendment to the education bill to study this issue and learn more about what effect mold in ventilation systems or asbestos in buildings have on students' health and cognitive abilities.

And it appears that we may need more information about all of the possible health impacts of asbestos and asbestos-like compounds in the workplace. For example, in New York, there have been hundreds of claims filed by talc mine workers found to have workrelated respiratory disabilities. Documents show that miners, millers, and mine supervisors in New York have died or are dying from disease caused by fibers--mostly asbestos--in their lungs.'

And there is at least one facility in New York that we know received materials from the vermiculite mine in Libby that we will hear more about today. This site has been referred to OSHA for further action.

So again, I think these environmental and workplace issues are vitally important. I want to thank Senator Murray for calling today's hearing. I am sorry that I am not able to stay longer, but I will be reviewing all of the testimony presented today.

Thank you.

Senator Murray. Again, thank you to all of our panelists who have travelled some distance to be here today and for your expertise. We appreciate your helping us get a better picture of asbestos and the concerns that we have in this country.

I will go back to what I said at the beginning of the hearing. I, like most Americans, thought asbestos was banned at least a decade ago. I think we have a lot to learn, and I think we have a lot to look at in the near future.

Thank you very much.

[Additional material follows:]

ADDITIONAL MATERIAL

Prepared Statement of Senator Burns

Mr. Chairman, Let me begin by thanking you and the committee for holding this hearing on asbestos in the workplace and its' implications for workers and their families. This is a vitally important issue generally and, as you know, it is an immediate and on-going issue for my constituents in Libby, Montana.

It is because of the on-going nature of the problem that I thank you for this opportunity to speak before your committee. For the past two years, the EPA has been in Libby assessing the levels of raw asbestos contamination from a former vermiculite mine and has begun the job of cleaning up the area. I am concerned about the length of time being taken as well as the costs associated with that cleanup effort. At the conclusion of this fiscal year, it is estimated that the EPA will have spent some \$30 million. I would like to hear from EPA just how far along in the process we are and would like as well a realistic estimate of how much time and expense is envisioned to complete the job of cleaning up the mine site and, more importantly, the community.

Additionally, both the Governor of Montana and I have asked EPA for a report on the economic implications of designating Libby a ``Superfund'' site. Currently, the work is being done under emergency status and the EPA has made it clear that, to assure long-term funding to continue the cleanup process, it would be best to put Libby on the National Priorities List (NPL) or ``Superfund'' list. It seems to me that the EPA has had abundant opportunity over the years to assess the economic consequences of such a designation but we still haven't gotten much information from the agency. I have the Governors' most recent request for answers and would appreciate her letter being entered into the record. Comments from the EPA coordinator in Libby indicate a preference to establish Libby as a Superfund site but the final decision should be made by all concerned with a complete understanding of the impacts that the designation brings to this community and its' citizens.

I am not interested in assigning blame to the tragedy in Libby. I must add that, considering the role EPA has had in the current tragedy facing Libby and it's citizens, it is not too much to expect that the Agency go the extra mile in doing everything it can to make Libby whole again with the least possible negative impact. When I first was made aware of the asbestos situation in Libby, we asked the EPA for background and discovered the Agency was in Libby in the 1970's and, although it was noted by EPA that there was a significant health risk from exposure to the raw asbestos fibers at the mine, little or nothing was done to protect the workers. A recent report from the Inspector Generals Office of the EPA confirms that EPA was not responsive to the workers or the community and that is very much part of the problem facing these folks today.

Asbestosis and the other diseases that result from exposure sometimes don't reveal themselves for twenty or thirty years. The inaction of the state and federal agencies charged with protecting workers have contributed to the problem and those very agencies now need to fix the problem with the absolute least harm to those they failed originally.

Mr. Chairman, I note with interest that the Agency for Toxic Substances and Disease Registry (ATSDR) is not testifying before this committee today. To obtain a better understanding of the health impact on workers and communities exposed to vermiculite-related asbestos, I respectfully suggest this committee visit with the ATSDR. That agency

will soon release the results of a comprehensive screening of some 6,000 people from the Libby area to determine the effects of exposure in the work place and in the community at large. While the briefing may be specific to raw asbestos exposure, there are more than enough exposure sites throughout the country to make the information pertinent to your oversight of workers health.

I will continue to monitor the situation in Libby with my emphasis being on the health and economic welfare of its' citizens. That means with an eye on those whose charge was and remains cleaning up the town and, to the extent possible, improving the quality of life for all its citizens.

Thank you again, Mr. Chairman, for providing this forum.

Prepared Statement of Senator Max Baucus

I would like to thank you Senator Murray and Chairman Kennedy for holding this hearing on such an important issue and for allowing me to testify before the Committee today.

I sincerely hope that the attention directed to the tragedy at Libby, Montana by the distinguished members of this Committee will help ensure that no other community in this nation will ever suffer the same fate as the people of Libby.

Although the intense national attention focused on the town of Libby has not always been welcomed by residents in the community, I know that Senator Murray and the Committee called this hearing so that we can better understand what the federal government can do to make sure its citizens, particularly workers and their families, are protected from exposure to asbestos.

As many of you may know, hundreds of people in the small town of Libby in Northwestern Montana have sickened or died because of their exposure to asbestos contaminated vermiculite. Hundreds more will sicken or die. The vermiculite came from a mine owned and operated by WR Grace & Co. At its peak, the mine produced nearly 80% of the world's supply of vermiculite.

Mining and related activities at the mine released asbestos fibers into the air around Libby. Mine waste contaminated with asbestos was used all over the town, in the high school track, in local yards and an elementary school skating rink. The workers brought the dust home on their clothes and exposed their families. Many of those workers have died from asbestos related diseases. Many of their children and other family members are sick from asbestos. This is a terrible, terrible tragedy that has devastated this community.

And the worst, the very worst part about this tragedy is that, not only could WR Grace have done more to protect its workers and warn them of the dangers of asbestos, we in the federal government could have done more. As the Committee will explore with some of our witnesses today, the EPA could have done more, the Mine Safety and Health Administration could have done more. But not until a tragedy on the scale of Libby, Montana slaps us in the face do we react.

I have fought hard to focus the attention of EPA and other agencies on Libby because these people deserve our very best efforts to make their town whole and healthy again. The EPA in Montana has put a lot of time and resources towards cleaning up the town. The agency has put some terrific people on the ground to do what they can to protect residents from further exposure to asbestos.

But, as the field hearing I held back in February of 2000 highlighted, getting Libby, Montana a clean bill of health involves some big hurdles--time, expense, the sheer size of the problem. Not only has the legacy of the Grace mine taken its toll in human lives and suffering, but it is costing millions.

And, it will cost millions more and cost more lives--asbestos related illnesses take up to 40 years to show up. Despite the hard and dedicated work of local, state and other health officials, the victims in Libby face tremendous hurdles getting access to health care and treatment. The cost is simply crippling to some families.

Secretary Thompson did release an additional \$100,000 this year to help the residents of Libby get adequate treatment, at my insistence. Also, the Agency for Toxic Substances and Disease Registry (ATSDR), which has already screened thousands of residents for asbestos related illnesses, will screen an additional 2,000 residents.

But, despite this continuing federal support for the citizens of Libby, the size and scale of the Libby tragedy shows us that we could have done far more. The government policies and regulations we currently have in place didn't protect the workers, their families or the other residents in Libby, Montana from the deadly hazards of asbestos. That's a hard reality, and it should raise a lot of red flags about where, when and how the government regulates asbestos in this country today.

It's high time we seriously re-considered the scientific and public health evidence that has been available for decades about the dangers of asbestos. It's out there, and it's time we put it to use protecting our citizens. Because as Senator Murray noted in her opening statement, asbestos is still widely used in this country, in a variety of forms and a variety of places. Frankly, I don't know why some of the agencies here today haven't already acted--what more proof of the continuing dangers posed by asbestos do they need than Libby, Montana?

I remain strongly committed to working to ensure residents of Libby and Lincoln County receive the help they need to make their homes and community safe for them, their children and grandchildren. Part of that commitment is making sure Libby never, never happens again.

I look forward to hearing the testimony of witnesses gathered here today. Hopefully, they can shed light on why Libby happened and what we learned from it. Thank you again Senator Murray, Mr. Chairman, and to all of the distinguished members of this Committee for allowing me to testify today.

One final note, I have invited the EPA Administrator, Christine Todd Whitman to attend an Environment and Public Works field hearing or town meeting in Montana this fall, to make sure that Libby continues to receive the attention and resources it requires to make the community whole.

I would like to extend an open invitation to Senators Murray and Chairman Kennedy, and any other interested members of this Committee to attend that hearing. Thank you again.

Prepared Statement of David D. Lauriski

Mr. Chairman and Members of the Committee, I am pleased to appear before you today to discuss the ongoing efforts of the Mine Safety and Health Administration (MSHA) to promote miners' safety and health. At the outset, I want to tell you that I am honored and humbled to have been nominated by President Bush and confirmed by the Senate to the position of Assistant Secretary of Labor for Mine Safety and Health. Having spent virtually all of my life and career associated with the mining industry, it is a privilege for me to serve the American people, Secretary Chao, and President Bush in this important capacity. We will do everything we can to improve upon the tremendous advances in safety and health in the mining industry that have occurred in the past 30 years. The programs, policies, and initiatives of this Administration will be devoted to protecting the more than 350,000 miners working at the Nation's approximately 15,000 mining operations.

In my first 2\1/2\ months as Assistant Secretary, I have been continually impressed with the knowledge and dedication of the more than 2,000 MSHA employees. I have met, both at headquarters and in the field, the MSHA employees who work in our enforcement, education, training, or technical support activities, as well as those who work in meeting our programming, equipment and budgetary, and personnel needs. I challenge anyone to find another group of employees with a greater sense of mission.

This hearing focuses on workplace safety and asbestos contamination. These are extremely important issues that present us with many opportunities. First, however, I would to give you some insights into my general approach and objectives for MSHA.

In addition to meeting with the MSHA staff throughout the country, I've met with miners and operators, representatives of industry and labor organizations, State Grant representatives, and a myriad of other members of the mining community. The meetings have had two objectives: to hear first hand from everyone about their safety and health issues and concerns; and to set goals. If we are to continue to make progress in improving miners' safety and health, I believe it is vitally important to establish goals. The Secretary and I have challenged our own staff and our stakeholders to work with us to reduce mining industry fatalities by 15 percent each year over the next four years and to reduce the non-fatal days lost (NFDL) injury rate by 50 percent by 2005. In addition, we are currently working to establish specific health goals as well. I believe that these goals are achievable, as long as we have the commitment and help of everyone associated with our industry.

I have shared with the MSHA staff my priorities and expectations, and would like to share them with you. Mining in the 21st century presents us with new opportunities. If we are to continue the success of the past, we must find new and creative approaches to protecting safety and health. I am firmly committed to carrying out our responsibilities under the Federal Mine Safety and Health Act of 1977 (the Mine Act). But, as both the Secretary and I have said, investments in up-front prevention, through compliance assistance, education, training, and other outreach activities are critical if we are to move off the plateau that we have seemed to reach in the past few years. In this regard, I have asked MSHA staff, miners, mine operators, as well as representatives of the mining and labor associations, to think creatively. I am firmly committed to hearing the thoughts, suggestions, and ideas of our stakeholders. I can assure you that all will be consulted, and that we will make the most reasoned, informed decisions possible, all with miners' safety and health enhancements as our focus.

Since my appointment, two final rules to protect miners' health have become effective. These rules address both underground coal and metal and nonmetal miners' exposure to diesel particulate matter (dpm). The rule protecting underground coal miners from exposure to dpm, which was not challenged, became effective in May 2001. The metal and nonmetal rule, which was challenged, became effective earlier this month, on July 5, 2001. I would like to thank those industry, labor and government representatives who worked to reach the partial settlement agreement in the metal and nonmetal diesel particulate litigation. This settlement agreement, I believe, shows how we can work with our stakeholders in the best interest of miners' safety and health.

Beginning last week, and continuing through August, MSHA is holding a series of outreach seminars across the country to help miners and mine operators comply with the metal and nonmetal diesel particulate rule. These seminars are part of our concerted effort to use all of the tools available under the Mine Act to enhance miners' health and safety. Providing the metal and nonmetal mining community with

knowledge of the rule at the beginning of the process is critical to their ability to understand and comply with the rule.

This approach, addressing demonstrated safety and/or health issues using the most effective and efficient tools, and providing the mining community with the benefit of our reasoning and expertise, will be our standard operating procedure.

I would like to devote the remainder of my testimony to MSHA's work to protect miners from exposure to asbestos.

MSHA's asbestos regulations date to 1967. At that time, the Bureau of Mines (MSHA's predecessor) used a 5 mppcf (million particles per cubic foot of air) standard. In 1969, the Bureau proposed a 2 mppcf and 12 fibers/ml standard, which was promulgated in 1969. In 1970, the Bureau proposed to lower the standard to 5 fibers/ml, which was promulgated in 1974. MSHA issued its current standard of 2 fibers/ml at the end of 1978. Since enactment of the Mine Act, MSHA has conducted regular inspections at both surface and underground operations at metal and nonmetal mines. During its inspections, MSHA routinely takes samples, which are analyzed for compliance with its standard.

In briefings with the MSHA staff, I was advised of the issues surrounding vermiculite mining in Libby, Montana and elsewhere. I was pleased to learn that the Agency had taken steps to determine current miners' exposure levels to asbestos, including taking samples at all existing vermiculite, taconite, talc, and other mines to determine whether asbestos was present and at what levels. Since the Spring of 2000, MSHA has taken almost 900 samples at more than 40 operations employing more than 4,000 miners. During our sampling events, the MSHA staff also discussed with the miners and mine operators the potential hazards of asbestos and the types of preventive measures that could be implemented to reduce exposures. These efforts continue today.

MSHA also keeps in frequent contact with its sister Agency, OSHA, and others, including the Environmental Protection Agency, the National Institute for Occupational Safety and Health, which has mine health and safety research responsibilities, and the United States Geological Survey, to ensure that our staff is aware of and involved in discussions concerning asbestos related issues. I expect the MSHA staff to keep up with the science and ongoing research activities, as well as other Agencies' experiences concerning asbestos. I can assure you that we will continue to act responsibly, and take action when the facts demonstrate that it is necessary to protect miners' safety and health.

I have read the Office of the Inspector General's (OIG) ``Evaluation of MSHA's Handling of Inspections at the W.R. Grace & Company Mine in Libby, Montana,' ' which was issued in March. The report does contain five major recommendations, and I can assure you that we are diligently working to address the issues raised in those recommendations.

The OIG recommended that MSHA lower its existing permissible exposure limit for asbestos to a more protective level, and address take-home contamination from asbestos. It also recommended that MSHA use Transmission Electron Microscopy to analyze fiber samples that may contain asbestos. We are currently considering these recommendations, which would involve rulemaking. I appreciate the review and analyses conducted by the OIG, and am giving considerable thought to their recommendations as we work toward our decisions. Please be assured that I share your conviction that miners' health must be protected, and certainly miners should not be exposed to contaminants at hazardous levels. Our objective is to ensure that our actions will address the underlying health issues that led to the OIG's recommendations, and that whatever course of action we take, miners and their families are not over-exposed to harmful substances as a consequence of their decision to work in the mining industry.

The OIG also recommended that the Agency remind its staff of the Mine Act's prohibition on giving advance notice of inspections. Section 103(a) of the Mine Act states, in part that: ``. . . In carrying out the requirements of this subsection, no advance notice of an inspection shall be provided to any person. . . . I am pleased to report that MSHA recently reissued a memorandum to the Agency's metal and nonmetal enforcement personnel reminding them of this provision. We will be happy to provide the Committee with a copy of this reminder.

MSHA's inspectors undergo thorough training at the National Mine Health and Safety Academy in Beckley, West Virginia. We train our inspection staff not only in the requirements of the Mine Act and the implementing regulations, but also in the Agency's inspection procedures and policies. In addition to continuing to train and retrain our inspectors in the prohibition on giving advance notice, we will remind our employees of their responsibilities and inspection procedures annually.

A fifth recommendation in the OIG's report dealt with training the MSHA inspectors and other health professionals on asbestos-related matters. On April 17-19, 2001, MSHA held a training session for its metal and nonmetal health staff at our National Mine Health and Safety Academy. The training, which was attended by industrial hygienists and other health specialists, covered the major health issues currently facing MSHA and the mining industry, including miners' exposure to asbestos. Included in this training were discussions of asbestos case studies, a review of the Libby experience, as well as sampling and analytic methodologies. The individuals who received this training are providing similar training to other inspection personnel in their respective district and field offices. In addition, as we reported to the OIG, MSHA has established a committee to develop specific training on asbestos-related matters for its inspectors.

Education and training are critical to promoting miners' safety and health. They provide mine operators and miners with the knowledge to take needed actions to prevent injuries and illnesses. Sharing our knowledge and information with the mining public and other interested parties is part of our education and training efforts. In this regard, MSHA has several items on its home page concerning asbestos, including our health regulations, a discussion of sampling procedures for airborne contaminants, and a program information bulletin reminding the mining industry of the potential health hazards from exposure to asbestos fibers. In addition, we are working to consolidate these materials and other information regarding asbestos on a single site on our home page.

The Mine Act, in my view, gives MSHA all the tools necessary to protect miners' safety and health. The history of miners' safety and health over the past 25-30 years demonstrates the statute's effectiveness. The Libby experience is, of course, troubling. More effective and efficient use of the Mine Act's enforcement, education, training and technical support authorities will help us to achieve even greater improvements in our industry. These provisions, as well as those outlining our rulemaking authorities and responsibilities, provide us with the necessary framework to ensure miners are appropriately protected from harmful contaminants, including asbestos.

In conclusion, Mr. Chairman, I have devoted my life to miners' safety and health, and I am passionate about this important work. My thirty years associated with this industry have taught me many valuable lessons, the most important of which is that safety and health improvements demand creative ideas from everyone involved. We at MSHA have a number of challenges and opportunities facing us, and among the most important is our obligation to protect miners from over-exposure to asbestos. However, I am sure that with the involvement of miners,

mine operators, as well as their representatives, we will protect and improve miners' safety and health.

Mr. Chairman, other members of the Committee, that concludes my prepared remarks. I would be happy to answer your questions.

Prepared Statement of R. Davis Layne

Mr. Chairman, Members of the Committee, I appreciate this opportunity to testify today on how the Occupational Safety and Health Administration (OSHA) protects workers from the dangers of asbestos exposure. Asbestos can cause a variety of serious health effects including asbestosis, mesothelioma and lung cancer. Asbestos-related diseases have a variable latency period, often extending from 10 to 40 years from initial exposure to onset of illness.

The Occupational Safety and Health Act of 1970 (the OSH Act) gives the Secretary of Labor authority over all working conditions of employees engaged in business affecting commerce, except those conditions with respect to which other Federal agencies exercise statutory authority to prescribe or enforce regulations affecting occupational safety or health. The OSH Act also provides that States may operate their own occupational safety and health programs under a plan approved by the Secretary. A 1979 Memorandum of Understanding between the Mine Safety and Health Administration (MSHA) and OSHA delineates the division of jurisdiction between the two agencies.

Since OSHA's inception in 1971, the Agency has used its authority for standard-setting, enforcement, and compliance assistance to protect workers from the threat of asbestos. In fact, there has been more rulemaking activity involving asbestos than any other hazard regulated by OSHA. Between 1971 and 1994, OSHA issued two emergency temporary standards, three major notices of proposed rulemaking, three final rules, and 31 Federal Register notices related to asbestos.

Indeed, the final asbestos rule issued in June 1972 was the Agency's first comprehensive standard. This regulation reduced the permissible exposure limit (PEL) to an eight-hour, timeweighted average of two fibers per cubic centimeter of air, with a maximum ceiling of 10 fibers at any one time. The standard became fully effective in July 1976. The asbestos standard served as a model for subsequent OSHA health regulations because it not only set a PEL but included requirements for protective measures such as engineering controls, personal protective equipment, air or exposure monitoring, medical surveillance, work practices, labels, waste disposal, and recordkeeping.

In June of 1986, due to new scientific evidence regarding the carcinogenicity of asbestos, the PEL was lowered to an eight-hour, time-weighted average of 0.2 fibers per cubic centimeter of air. Separate standards were issued for general industry and construction, with the same level of protection. The rules provided for engineering controls, work practices, personal protective equipment, decontamination, communication of hazards to workers, regulated areas, housekeeping procedures, recordkeeping and employee training.

In August 1994, to provide even better worker protection, OSHA published two final asbestos standards: one for general industry and one for construction. It also added shipyards as a covered industry. The PEL was reduced to 0.1 fibers per cubic centimeter. Work practices and engineering controls required under the 1994 standard should, however, further reduce the risk to workers. All employers are required to communicate information about asbestos hazards to all potentially affected employees at a worksite. In addition, employers must provide training and education on asbestos exposure.

To prevent spreading asbestos outside the workplace, OSHA's

standards require the employer to provide the employees protective clothing and ensure that the employees remove the contaminated clothing before leaving the workplace. To enhance the protection, employers must provide showers and separate clean change rooms for dressing into clean clothing.

The standard also addresses exposures during automobile brake and clutch work and roofing work. A mandatory appendix specifies the engineering controls and work practices to be followed during this work activity. It requires that engineering controls and good work practices be implemented at all times during brake servicing. In addition, employers must provide training on asbestos hazards to all brake and clutch repair workers.

In 1992, OSHA reviewed available relevant evidence concerning the health effects of nonasbestiform tremolite, anthophyllite and actinolite, and examined the feasibility of various regulatory options. These three minerals are regulated in 29 CFR 1910.1000 by a Permissible Exposure Limit of five milligrams per cubic meter of respirable dust. OSHA determined that there was insufficient evidence to support a finding that exposed workers would be at a significant risk from those substances if they were not regulated in the asbestos standard.

OSHA enforces the current asbestos standard through its inspection program. Asbestos is examined during routine, random or targeted inspections, though they are primarily conducted in response to complaints from employees, or as a result of referrals from Federal or State agencies. Regardless of the reason for the complaint or referral, OSHA compliance officers search for evidence of real or potential asbestos exposure. Since October 1995, OSHA has cited employers for violations of its asbestos standards 15,691 times. There were almost 3,000 inspections conducted by Federal or State OSHA programs in which violations of the standard were cited, including violations found in residential and commercial construction, auto repair facilities such as brake shops, and hotels. As recently as June 21, OSHA inspected a major lawn products company for the presence of asbestos. Samples of vermiculite and vermiculite ore were found to be free of asbestos in this instance; OSHA compliance officers, nevertheless, remain alert to the threat of asbestos exposure.

In addition to enforcement, OSHA provides compliance assistance to employers and employees to help them understand the dangers of asbestos, and what can be done to minimize the threat. OSHA's Web page connects computer users to concise and easy-to-read publications on asbestos, which are available to the public free of charge. Pamphlets explain the requirements of the standard for both general industry and construction. Included in each is a list of sources of assistance. OSHA's Web page also includes reports, links to other Web sites, slides, and information about taking samples and controlling exposure to asbestos.

OSHA offers an intensive course covering the recognition and control of asbestos at its Training Institute in Illinois. OSHA recently held a training session for the Department of Labor's Region V employees, to maintain the strength of the Agency's capabilities to address asbestos hazards, and plans to expand this training to other regions.

OSHA has also developed software that can be downloaded from its Web site to provide interactive expert advice for building owners, managers and lessees, as well as for contractors of building renovation, maintenance, and housekeeping services. Once installed on a computer, the software asks questions about a building site. It then asks follow-up questions based on answers, and produces a report on responsibilities under the asbestos rules.

OSHA's on-site consultation program, which is free and available to

employers in all 50 states, provides expert assistance on asbestos. Consultants identify asbestos in the workplace and explain methods for reducing exposure. Over the last five years, state consultants took 859 asbestos samples from 162 small businesses for laboratory analysis. These employers, who formerly did not realize that there was asbestos in their workplaces, were able to protect their workforce after these consultation visits.

OSHA works closely with other agencies to ensure that jurisdictions are clearly defined. OSHA also actively coordinates with other Federal agencies on asbestos and asbestos-related issues. The OMNE Committee, composed of representatives from OSHA, MSHA, the National Institute for Occupational Safety and Health (NIOSH), and the Environmental Protection Agency (EPA), meets monthly to exchange information about mutual areas of concern. In addition, the various Federal agencies with jurisdiction over the regulation or research of asbestos, including OSHA, MSHA, the Consumer Products Safety Commission, EPA, NIOSH and others, frequently communicate to share information about proposed and on-going research activities and other matters related to asbestos.

OSHA also has requested technical assistance from NIOSH to determine potential asbestos exposure from working with materials that contain vermiculite. In response to this request, NIOSH has conducted investigations in horticultural facilities to determine potential exposure to employees from asbestos-contaminated vermiculite used with potting soil in lawn and garden products. In addition, NIOSH is in the process of investigating exposures at vermiculite exfoliation plants. A report from NIOSH is expected by the end of this year. OSHA is also in the process of reviewing a study that was performed by EPA to determine the extent of homeowner exposure to asbestos from vermiculite used as insulation in housing, such as Zonolite. OSHA also participated with EPA in the Asbestos Health Effects Conference, held in San Francisco in May of this year. This was an international meeting to improve the scientific foundation for assessing the health risks related to asbestos. OSHA will continue to participate in this and other scientific fora to aid in determining the adequacy of the current OSHA rule.

As the above activities indicate, OSHA has continuous and multifaceted programs in place to address the health hazards to workers created by asbestos, both in production and as a contaminant. These programs apply to all workplace settings covered by the OSH Act, and are intended to protect all workers, including those who process and work with materials potentially contaminated with asbestos, such as Zonolite insulation and lawn or garden products. OSHA coordinates many of these activities with other agencies.

OSHA believes its current statutory authorities are sufficient to carry out its responsibilities. Given its broad mission to protect workers from all types of occupational hazards, over the years the Agency has devoted a significant portion of its resources to the health effects caused by asbestos exposure, and will continue to do so.

This concludes OSHA's formal remarks. I will be pleased to answer any questions the Committee may have.

Prepared Statement of Kathleen M. Rest

Mr. Chairman and members of the Committee, on behalf of the National Institute for Occupational Safety and Health (NIOSH), Centers for Disease Control and Prevention, I am pleased to provide this testimony addressing the current scientific knowledge about health risks to workers from exposure to airborne asbestos.

background

Asbestos is a term that is generally used in referring to a group

of fibrous minerals with exceptional resistance to degradation by heat, acids, bases, or solvents. The minerals are not combustible and have a high melting point and low thermal and electrical conductivity. These and other useful properties had resulted in the development of thousands of commercial uses for asbestos-containing materials by the early 1970s. However, as the use of asbestos dramatically increased, the lethal effects of airborne asbestos became clear. Regulatory action and liability concerns related to the now well-established connection between inhalation of asbestos fibers and a variety of serious and often fatal diseases have reduced or eliminated the use of asbestos in many commercial products. However, asbestos and asbestos-containing materials are still found in many residential and commercial settings and pose a risk of exposure to workers and others.

Asbestos is defined in Federal regulations as the minerals chrysotile, crocidolite, amosite, tremolite asbestos, actinolite asbestos, and anthophyllite asbestos. These six minerals are regulated by the Occupational Safety and Health Administration (OSHA), the Mine Safety and Health Administration (MSHA) and the Environmental Protection Agency (EPA). Five of the six asbestos minerals were used commercially (actinolite asbestos was not) and, as a consequence, it has been possible to observe and characterize their adverse health effects on humans.

asbestos-related diseases

Exposure to asbestos significantly increases the risk of contracting several diseases. These include: (1) asbestosis--a disease characterized by scarring of the alveolar regions of the lungs; (2) lung cancer--for which asbestos is one of the leading causes among nonsmokers, and which occurs at dramatically high rates among asbestos-exposed smokers; (3) malignant mesothelioma--a cancer of the tissue lining the chest or abdomen for which asbestos and similar fibers are the only known cause; and (4) nonmalignant pleural disease--which can appear as a painful accumulation of bloody fluid surrounding the lungs, but which more commonly is seen as thick and sometimes constricting scarring of the tissue surrounding the lungs. In addition, asbestos exposure is associated with excess mortality due to cancer of the larynx and cancer of the gastrointestinal tract. The malignant diseases--the cancers including mesothelioma--are often fatal within a year or a few years of initial diagnosis. In contrast, asbestosis deaths typically occur only after many years of suffering from impaired breathing.

It is not known exactly how asbestos fibers cause disease. What is known is that the fibers, too fine to be seen by the human eye, can become airborne during various industrial processes or from handling asbestos-containing materials. These microscopic fibers can be inhaled and/or swallowed. As much as 50 percent or more of inhaled asbestos fibers remain lodged in the lungs, where it is almost impossible for the body to dispose of them. Asbestos fibers are extremely resistant to destruction in body fluids, and many of these fibers are too long to be engulfed and removed by the cells that normally scavenge and remove particles that happen to deposit in the lungs. Generally, as the burden of retained fibers increases in the body, so does the likelihood of the diseases mentioned previously. Most asbestos-related diseases, particularly the malignant ones, have long latency periods often extending 10-40 years from initial exposure to onset of illness. While asbestos-related lung cancer and mesothelioma are frequently not curable, they and other asbestos-related diseases are clearly preventable by eliminating or limiting exposures to asbestos. The amount and duration of exposure are factors which can determine the risk of adverse health effects.

exposure to asbestos in the workplace

Workplace exposure to asbestos remains a serious occupational health problem in the United States, with both vast numbers of workers at risk due to past occupational exposures and many other workers experiencing ongoing occupational exposures. Since the beginning of World War II, as many as eight million workers have been exposed to asbestos. Although the number of newly exposed workers has declined sharply since the development of regulatory standards in the 1970s, there are still substantial numbers of workers with continuing exposure. In 1991, NIOSH estimated that nearly 700,000 workers in general industry remained potentially exposed to asbestos, but that estimate did not include mining, railroad work, agriculture, and several other industry sectors.

The U.S. Geological Survey reports that asbestos continues to be imported for use in friction products (e.g., brakes and clutches), roofing products, gaskets, and thermal insulation. Construction workers involved in the renovation or demolition of buildings that contain asbestos are at particular risk of asbestos exposure. Many workers in the relatively new asbestos removal industry are potentially exposed, relying on personal protective equipment and other methods for limiting inhalation of asbestos fibers. Industrial maintenance personnel are also at risk when they repair equipment, sometimes in enclosed spaces, that is insulated with asbestos-containing material, as are automotive service personnel involved in brake and clutch repair work.

In addition, ``take-home'' exposures--involving family members of workers who bring asbestos home on their hair, clothing, or shoes--is also a well-recognized hazard and was addressed in a 1995 NIOSH report to Congress.

Because of the hazardous nature of asbestos, approaches to consider for control of exposure include the substitution of less hazardous materials and the labeling of all asbestos-containing materials so that required exposure controls can be implemented.

ongoing research into asbestos exposure

NIOSH currently is assessing workers' asbestos fiber exposure at selected horticultural operations that are using vermiculite, and at operations that expand vermiculite ore. Most of the vermiculite now being produced for domestic use is obtained from one of four mines, three of them domestic and one located in South Africa. NIOSH will complete asbestos exposure assessments at two expansion plants for each ore supplier, along with a number of horticultural sites. We expect the field study to conclude by the end of calendar year 2001. At present, field sampling has been completed at four expansion plants and three horticultural operations.

Options under consideration for future research activities include identifying and characterizing other downstream uses of fiber-contaminated vermiculite that have not been previously recognized.

tracking of work-related asbestosis deaths

NIOSH, using data from death certificates, has been tracking asbestosis mortality in the United States. Deaths associated with asbestosis increased from fewer than 100 annually in 1968 to more than 1200 per year in 1998, the most recent year for which final national data are available. In approximately one-third of these deaths, asbestosis was reported as the underlying, or main, cause of death, a proportion that has not changed appreciably over time. In the other two thirds of deaths, asbestosis was reported to have contributed but not caused the death. Death certificate data indicate that workers in the ``ship and boat building and repairing'' industry and ``insulation workers'' appear to have experienced the greatest risk of asbestosis. It also shows, however, that elevated asbestosis mortality is associated with a wide-ranging variety of other occupations and industry sectors.

Among the occupations with significantly elevated asbestosis mortality are: insulation workers; plumbers; sheet metal workers; plasterers; heating/air-conditioning/refrigeration mechanics; electricians; welders; chemical technicians; mechanics and repairers; stevedores; masons; furnace and kiln operators; painters; construction workers; and janitors and cleaners. Please note that the fact that an occupation (or industry sector) has ``significantly elevated asbestosis mortality'' does not mean that all workers in the occupation or industry sector are exposed to asbestos.

The other industry sectors with significantly elevated asbestosis mortality include, but are not limited to: nonmetallic mineral products; construction materials and industrial chemicals; petroleum refining; tires and other rubber products; aluminum production, hardware, plumbing, and heating supplies; construction; electric power generation; railroads; glass products; building material retailing; paper manufacturing; and steelmaking.

Asbestosis mortality is a delayed phenomenon which reflects exposures that typically occurred decades earlier. To better describe more recent exposures, NIOSH recently prepared and published a summary of data describing the results of asbestos samples collected and reported by OSHA and MSHA inspectors in their agencies' centralized data systems. Over the decade-long period from 1987 to 1996, Federal occupational safety and health inspectors reported an average of about 600 air samples for asbestos each year, although the annual number of reported samples declined by about 50% for each agency during that decade. (Not all collected samples are reported into the centralized data systems.) In the construction industry, nearly 7% of the samples indicated asbestos fiber concentrations exceeding the applicable OSHA or MSHA permissible exposure limit (PEL), and the average asbestos fiber concentration of all samples was about one-half the PEL. In the industry classified as ``miscellaneous nonmetallic mineral and stone products,'' (which includes sites regulated by OSHA and MSHA) over 30% of asbestos samples exceeded the exposure limit (either OSHA's or MSHA's, as applicable) and the asbestos construction workers involved in the renovation or demolition of buildings that contain asbestos are at particular risk of asbestos exposure. Many workers in the relatively new asbestos removal industry are potentially exposed, relying on personal protective equipment and other methods for limiting inhalation of asbestos fibers. Industrial maintenance personnel are also at risk when they repair equipment, sometimes in enclosed spaces, that is insulated with asbestos-containing material, as are automotive service personnel involved in brake and clutch repair work.

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asbestos in other settings, as well, ranging from textile operations to schools.

the definition of asbestos

In 1990 testimony before OSHA, NIOSH broadened its science-based definition of ``asbestos'' as a result of concerns about the microscopic identification of the six regulated asbestos minerals. The six minerals can also occur in a non-fibrous (so-called ``massive'') form. The non-fibrous mineral forms of the six asbestos minerals can be found geologically in the same ore deposits in which the fibrous asbestos minerals occur or in deposits where other commercially exploited minerals are mined (e.g., industrial grade talc). ``Cleavage fragments'' can be generated from the non-fibrous forms of the asbestos minerals during their handling, crushing, or processing, and these ``cleavage fragments'' are often microscopically indistinguishable from typical asbestos fibers of the (fibrous) minerals.

The elemental composition of the six asbestos minerals can vary slightly as a result of geological conditions such as pressure, temperature, or proximity of other minerals. Recognizing these variations in elemental composition, NIOSH believes that the six asbestos minerals can be defined by their ``solid-solution'' mineral series. For example, the mineral series tremoliteferroactinolite contains the asbestos mineral actinolite. These mineral series are considered solid-solutions in which cations (i.e., sodium, calcium, magnesium, iron, etc.) are replaced by other cations which can affect the elemental composition of the mineral without significantly altering the structure.

NIOSH bases this expanded ``asbestos'' definition--encompassing the entire solid-solution mineral series for each of the six currently regulated asbestos minerals and including cleavage fragments from the non-fibrous forms of these minerals--on scientific evidence from cellular and animal studies suggesting that dimension, specifically length and diameter, as well as durability, may be more critical factors in causing disease than chemical or elemental composition.

challenges to preventing asbestos exposure: areas of possible additional research

There are other fibrous minerals that technically do not fall within either the current regulatory or the NIOSH definition of asbestos, even though fiber shape, size, and durability indicate their potential to induce health effects similar to those of the six regulated asbestos minerals. The inclusion of only six specified fibers within the asbestos regulations may create a false sense of security that those mineral fibers that are not included are without risk. Clearly, other fibers may act in the same way as the regulated fibers and pose significant health risk, and mixtures of fibers may be lethal as well.

Based on epidemiological studies, it is clear that occupational exposure to mineral fibers that contaminate vermiculite from Libby, Montana, caused high rates of asbestos-related diseases among exposed workers. The fibers that contaminate vermiculite from Libby include tremolite, one of the minerals within the definition of asbestos as currently regulated. Some evidence indicates that only 10 to 20% of the fibrous mineral content of the Libby vermiculite was tremolite. A much higher proportion--80 to 90%--of the fiber contaminant in this vermiculite has been characterized as several other similar fibers that are not currently regulated as asbestos, such as richterite and winchite.

Another example of a mineral that can produce asbestos-related diseases but is neither regulated as asbestos nor classified as asbestos under NIOSH's current scientific definition, is erionite. Erionite is a known human carcinogen, and environmental exposures

outside the U.S. have been associated with an increased risk of malignant mesothelioma and lung cancer. (We are unaware of any occupational exposure to erionite in the U.S.)

Additional research possibilities which may be considered include efforts to better determine physical and/or chemical characteristics affecting toxicity of these naturally occurring mineral fibers as well as durable manufactured fibers. Direct evidence by which to attribute particular health effects to each possible fiber type is not currently available; obtaining such evidence is another area under consideration for future research. Epidemiological studies of people exposed to naturally occurring or manufactured fibers would provide important new information and are also under consideration for future research, along with animal toxicologic studies to help supply needed information if epidemiologic studies are not feasible.

In addition, further research is under consideration in the areas of exposure measurement and analysis of fibers. Although asbestos is comprised of fibers of many diameters and lengths, risk assessments and exposure assessments are based on air concentrations of fibers detectable by a technique called phase contrast microscopy. This method leaves an undetermined number of asbestos fibers in each sample uncounted because they are too thin for detection. Because of this measurement bias, asbestos exposure risks are currently based only on fibers large enough to be detected. More sensitive methods are currently available, but these methods could benefit from better standardization. Additional work to improve and standardize the methods for asbestos fiber measurement is being considered because it would help advance prevention and control efforts to protect exposed workers.

conclusion

In summary, we know much about the adverse health effects caused by the inhalation of asbestos fibers. Many exposures or potential exposures have been identified, and appropriate precautions are used when workers are handling or working around these materials. Increased understanding of the health effects of fibrous minerals that fall just outside the existing definitions of asbestos will help us find ways to provide appropriate protection for workers exposed to those materials. Further identification and tracking of potential exposures to fibercontaminated vermiculite and other contaminated materials that may be identified will help us assure that no one is unknowingly exposed to these materials. While information is being gathered, public health prudence guides us to reduce known exposures to these potentially hazardous fibrous minerals.

Prepared Statement of Michael H. Shapiro

Good afternoon Madam Chairman and members of the committee. My name is Michael Shapiro, the Acting Assistant Administrator for EPA's Office of Solid Waste and Emergency Response. I am pleased to appear today to discuss EPA's efforts to clean up asbestos contamination in Libby, Montana and the Agency's efforts to identify related sites nationwide. I want to make clear that EPA views the Libby asbestos site as one of the most significant Superfund sites nationally. The Agency is committed to working with our partners to take all steps necessary to protect human health and the environment in Libby and related locations.

Libby is a small town of about 2,600 residents in northwest Montana. For more than 60 years, a mine operated in Libby, which produced 80 percent of the world's vermiculite. The vermiculite was shipped around the country for use as a soil conditioner and in the manufacture of insulation and packing materials. The mine and processing facilities in Libby employed roughly 2000 workers from 1924

to 1991.

One of the substances in the Libby vermiculite ore was asbestos. Asbestos contamination resulting from mining and processing operations has led to serious public health concerns among members of the Libby community.

EPA is working closely with other Federal and state agencies to address the asbestos contamination and public health concerns in Libby and other communities across the country. The response to potential asbestos contamination is a multi-agency effort. EPA, The Agency for Toxic Substances and Disease Registry (ATSDR) and the U.S. Public Health Service (PHS) established an emergency response team on November 22, 1999 to begin environmental and medical investigations in Libby.

EPA is focusing on site investigation and cleanup activities in Libby using Superfund authority. The Agency is also using Superfund to assess the need for cleanup at other locations across the country where vermiculite ore was mined or shipped. Thus far, EPA has committed more than \$30 million for the investigation and cleanup in Libby.

In June of 2000 EPA initiated or provided oversight of cleanup at 2 heavily contaminated former processing areas in Libby. The Agency has also started the cleanup of a mining road, town park facilities, a high school track and several residences.

In addition to Libby, EPA identified 243 locations around the country that may have mined or received vermiculite. As of early July, EPA completed initial evaluations of possible asbestos contamination at 216 of these facilities. Thus far, we have determined that 17 locations require response by EPA and other federal or state agencies.

One example is the Western Minerals site in Minneapolis, Minnesota, which processed over 118,000 tons of vermiculite ore from Libby between 1937 and 1989. Since September of 2000, EPA and the state of Minnesota have been sampling and removing asbestos contamination at the former plant site and nearby residential yards. An ATSDR-funded health survey is being conducted by the Minnesota Department of Health to determine the magnitude of the health impacts to former workers and nearby residents.

In March of 2001, EPA's Office of Inspector General issued a report which focused on EPA's activities in Libby, as well as EPA's broader role in regulating asbestos. The report concludes that EPA should continue its cleanup efforts in Libby. The report also emphasizes the importance of cross-agency coordination to address potential asbestos contamination associated with mining and other operations unrelated to Libby.

EPA will continue to work closely with the Mine Safety and Health Administration, the Occupational Safety and Health Administration, the National Institute for Occupational Safety and Health, ATSDR and the PHS to protect public health in Libby, Montana and any other community that may be threatened by asbestos contamination from vermiculite ore. EPA is also coordinating closely with our Federal and state partners to identify additional asbestos contamination that may require cleanup under Superfund.

Thank you for the opportunity to appear today. I will be pleased to answer questions from the committee relating to the cleanup of Libby, Montana and related locations across the country.

Prepared Statement of Richard Lemen, M.D.

Thank you for inviting me to discuss this very important topic of asbestos and disease with you here today. My name is Dr. Richard Lemen. I am retired from the United States Public Health Service where I was Deputy Director and Acting Director of the National Institute for Occupational Safety and Health (NIOSH). When I retired I also was an

Assistant Surgeon General in the United States Public Health Service. I have spent my entire career, since 1970, studying the epidemiology of asbestos related diseases and have conducted numerous epidemiology studies, written many scientific papers, advised the World Health Organization, various other national governments, and have testified before Congress on several occasions concerning the health risks from exposure to asbestos. My CV, which I have supplied, the Committee will give you further information if you so desire concerning my studies on asbestos.

facts

In the United States it is estimated that between 189,000 and 231,000 deaths have occurred since 1980 due to workplace exposure to asbestos. Another 270,000 to 330,000 deaths are expected to occur over the next 30 years and for those workers exposed, over a working lifetime, to the current Occupational Safety and Health Administration (OSHA) standard of 0.1 fibers/cc 3.4/1000 workers will die as a result of asbestos related diseases. Given that the National Institute for Occupational Safety and Health (NIOSH) estimates, as of 1990, the latest figures available, that some 363,000 men and 32,000 women are exposed at work, the future mortality from asbestos related disease will continue to occur well into this new millennium.

If deaths of workers exposed to asbestos in the United States at the current occupational standard are anywhere near the magnitude just expressed, what then would be the magnitude of disease and death to the countless number of unsuspecting consumers using asbestos containing products? These products include such things found in the home as lamp sockets, floors, cat box fill, braking mechanism in washing machines, furnaces, dishwasher, and other products.

Why then is any form of asbestos still allowed in commercial products within the United States, or the rest of the world for that matter? The Environmental Protection Agency produced a list of at least 44 suspected asbestos-containing materials. Within their list were cement pipes, used still for the transport of portable drinking water, friction products such as brakes, to name just two widely used commercial products. Imports of asbestos containing products still arrive into the United States each year and include such things as asbestos-containing corrugated sheet, sheet panels, tubes & pipes, brake linings, where imports alone have gone up in the last 4 years from \$59 million in 1996 to \$89 million in 2000. Asbestos textile products are still coming into the US such as yarn & thread, cord & string, knitted material, clothing and they appear to be increasing each year according to the United States Geological Survey (USGS).

The most recent Criteria Document from the World Health Organization's (WHO) International Programme for Chemical Safety (IPCS) states in 1998 that no threshold has been identified for carcinogenic risks. This is consistent with the WHO's earlier conclusion in 1989 ``[The human evidence has not demonstrated that there is a threshold exposure level for lung cancer or mesothelioma, below which exposure to asbestos dust would not be free of hazard to health.]' The WHO recognizes what NIOSH concluded 25 years ago, in 1976, that ``. . . (only a ban can assure protection against carcinogenic effects of asbestos)''.

Asbestos is a term for industrial and commercial use rather than a mineralogical term. The principle commercial forms of asbestos fall into two mineral groups. The most widely exploited has been the mineral named chrysotile which fits into the serpentine mineral group accounting for over 98% of commercial asbestos usage. The other principle mineral group, the amphiboles, contains amosite, crocidolite and anthophyllite. Other asbestiform minerals that fall into the amphibole mineral group are tremolite and actinolite, which occur in

nature though they are rarely used, as large deposits are rare. Tremolite has been found as a contaminant of most commercial deposits of chrysotile and some talc. Tremolite has also been found as a contaminant of other minerals such as vermiculite while actinolite has been found as a contaminant of amosite from South Africa.

Asbestos has been responsible for a massive epidemic of disease and death since its commercial exploitation primarily beginning at the turn of this century. As we enter the new millennium we do not want to promote the myth, as is currently promoted by parties interested in the continued commercial exploration of chrysotile, that only one mineral group of asbestos, the amphiboles, were responsible for the disease and death associated with asbestos usage?

The fact that Austria, Belgium, England, The Czech Republic, Chile, Denmark, El Salvador, Finland, France, Germany, Iceland, Italy, Latvia, the Netherlands, New Zealand, Norway, Poland, Saudi Arabia, Sweden, and Switzerland have all banned asbestos, leads us to recognize that these countries feel the safe use of all forms of asbestos is not attainable and that alternative materials posing less risk to public health are desirable.

Further substantiation that asbestos cannot be used safely comes from the most recent International Programme for Chemical Safety Environmental Health Criteria 203-Chrysotile Asbestos. The document concluded ``Exposure to chrysotile asbestos poses increased risks for asbestosis, lung cancer and mesothelioma in a dose dependent manner. No threshold has been identified for carcinogenic risks.'' It further warn us that ``Some asbestos-containing products pose particular concern and chrysotile use in these circumstances is not recommended.'' ``Construction materials are of particular concern for several reasons. The construction industry workforce is large and measures to control asbestos are difficult to institute. In-place building materials may also pose risks to those carrying out alterations, maintenance and demolition. Minerals in place have the potential to deteriorate and create exposures.''

The conclusions of the IPCS are very consistent with the evaluation of 'the amphibole hypothesis carried out by Stayner, Dankovic and myself in 1996. However, there are still, today others that claim chrysotile asbestos is not as harmful as the amphiboles and can be used safely and should not be banned. We are at a point in the history of asbestos usage where chrysotile is the predominant type asbestos produced and consumed in the world today; it constituted about 98.5% of US consumption in 1992. While it is true that asbestos consumption has declined in both the US and Europe, sales to other countries (e.g., Southeast Asia, South America, and Eastern Europe) has, increased based on its usage in construction materials, the very materials that IPCS has warned against using. A review of the lung burden, epidemiologic, toxicologic, and mechanistic studies, lead to the conclusion that chrysotile asbestos exposure carries an increased risk of both lung cancer and mesothelioma. and that the hypothesis that these observations may be attributable to trace amounts of tremolite, an amphibole, a contaminant of the chrysotile may seem to be primarily of academic interest, because chrysotile exposures to workers and the public are also contaminated with tremolite.

controversy over asbestos fiber types (amphibole hypothesis)

The primary evidence for the amphibole hypothesis comes from pathologic studies in which lung burdens were measured. However, interpretation of these studies is hampered by the fact that chrysotile lung burdens are a poor reflection of integrated exposures and the fact that chrysotile exposure is highly correlated with lung burden of the amphiboles (e.g., tremolite). In addition, that pattern of asbestos fiber deposition in the lung does not appear to be consistent with the

pattern of deposition in the target tissue (i.e., pleura). A review of 92 consecutive cases of mesothelioma found that even while only 28.3% of the asbestos fiber type in the lung was chrysotile, it was the major fiber type identified in the mesothelial tissue itself. These findings further suggest that lung burden analysis for determining fiber type in mesothelioma etiology may not be appropriate and that determining predominate fiber type in the mesothelial tissue is the more rational determinant.

Some, with an interest in promoting the use of asbestiform materials in commercial products such as brakes, lawn products, talcs, and other uses want exemptions because they say their products contain cleavage fragments, which are not asbestiform. The facts are that cleavage fragments are almost never found in pure form and usually grow along with asbestos fibers in the same ore series. In fact asbestiform particles of the right size can cause disease and are therefore biologically active. It has been reported that Libby Montana vermiculite miners and the New York talc miners show the occurrence of asbestos related cancers, which can be explained no other way than their contamination with tremolite or with other particles of appropriate size to induce disease. These diseases are not going to be limited to just the miners, but will pass on to the consumer of these vermiculite and talc containing commercially available products. These are just two examples of consumer products containing deadly particles. There should be an all out effort by the Consumer Product Safety Commission (CPSC), the Environmental Protection Agency (EPA) and any other governmental agency whose mission is to protect the public's health to identify and order removal of such cancer causing particles.

history

I am attaching to my testimony a more detailed chronology of the usage, diseases, risks of disease and regulatory activities for asbestos, which are contained, in my ``Asbestos Timetables''. But I would like to give you a brief few highlights from that history.

The use of asbestos dates back thousands of years when asbestos fibers were being incorporated into pottery as early as 2500 B.C. The modern industry dates from about 1880, when asbestos was used to make heat and acid resistant fabrics. By the late 1800's and early 1900's the use of asbestos was being widely advertised. Johns-Manville ran full-page advertisements in several publications, like the January 13, 1906 issue of The Saturday Evening Post saying ``Serves More People in More Ways than any Institution of its kind in the World.'' Highlights in the production history of asbestos include its use as heat insulation as early as 1866; asbestos cement used as a boiler covering in 1870; commercial production of asbestos insulation materials in 1874; the first processing of Canadian asbestos into textiles in the U.S. in 1890; asbestos cement production in the U.S. began in 1903; flat asbestos cement board was produced in the U.S. in 1904; asbestos was first used as a brake lining in 1906; the first pipe making machines were imported into the U.S. in 1928; and asbestos spraying first began in tunnels in 1932.

Lung Disease

The first recorded case of asbestosis was reported, in London, by a Charing Cross Hospital physician Dr. Montague Murray, in 1906. It is interesting to note that Adelaide Anderson, Lady inspector of Factories included asbestos among the dusts known to cause injury to man, in a 1902 publication on dangerous industries in England. In 1912 the American Association for Labor Legislation mentioned asbestos related disease in their Industrial Diseases, as did the government of Canada Department of Labour. In 1918, American and Canadian insurance companies would not insure asbestos workers due to the un-healthy conditions in the industry. The first complete description of

asbestosis, including the naming of the disease and a description of ``curious bodies'', observed in lung tissue, appeared in 1924 and 1927 respectively. In 1930 the first case of asbestosis in the United States was reported and in the same year it was reported that ``asbestos bodies'' were found in the sputum of asbestos exposed workers. By 1930 it was clearly recognized that people exposed to asbestos dust developed the disease ``asbestosis. In 1933 a report even carried the case of asbestosis in a 10-year-old rough-haired terrier dog used as a rat in an asbestos factory. A study reported in 1936 asserted that continued exposure to asbestos could increase the fibrosis (lung scarring) in existing asbestotics and reported some evidence that asbestosis develops more rapidly in younger persons. In the early 1960's reports of asbestos related disease began to be reported in persons not directly exposed to asbestos, but who resided with asbestos workers or lived near sources of asbestos. Asbestosis is a progressive disease which can continue to worsen even after secession of exposure.¹²¹Asbestosis is not specific to humans and has occurred in animals other than under experimental situations. Besides the terrier described above, reports have described asbestosis in donkeys hauling asbestos ore. Environmentally induced asbestosis has also been found in field rats living in and around an asbestos mill and also in baboons living near an asbestos mill.

Cancer of the lung & mesothelioma

In 1935, in the United States and in the United Kingdom, reports of asbestos exposure with lung cancer appeared in the scientific literature. German physicians began calling lung cancer an occupational disease of asbestos workers. Epidemiological evidence in 1955, showed a ten-fold excess of lung cancers in those United Kingdom asbestos textile workers who had been employed before 1930, thus establishing the epidemiological link between asbestos exposure and lung cancer.

Between 1943-1946 reports of pleural (chest) and peritoneal (abdominal) tumors (mesotheliomas) associated with asbestos exposures appeared. In 1960 a major study of miners, millers, and transporters of asbestos and of non-mining residents found 47 cases of pleural mesothelioma, occurring between 1956 and 1960, one part of South Africa, the northwestern portion of the Cape Province, known to have many asbestos mines. Their study confirmed epidemiologically an association between exposure to asbestos and mesothelioma. The fact that environmental exposures were also occurring demonstrated the fact that low-level, non occupational exposures to asbestos could be hazardous. The first studies in the United States, to report mesothelioma with asbestos exposure were of factory workers, in 1963 and in 1964, of insulation workers.

With all of the scientific data and knowledge about asbestos, why is it still allowed in commercial products for general consumer usage, such as brakes, lawn products, cement pipes and others? We have seen the toil on workers mining asbestos, manufacturing asbestos, and using asbestos containing products. What will be the toil on the American consumer if asbestos continues to be allowed in commercially available products and American workplaces? Now is the time for the United States to join the growing list of Nations that have banned the further importation and use of asbestos. Asbestos related diseases are a result of human exploitation and only through stopping such exploitation can we take them away. Many responsible industries have taken this action, while others have not. Unfortunately, because some industries are unwilling to take such action for what ever reason, it is up to the Government to act. Asbestos is a deadly substance and has been known to be so for almost 100 years and we know that suppression of the asbestos containing dust will not work, as no thresholds for cancer can be established, and that even at the lowest standards to date excessive

disease and death will continue to occur, there is no choice but to BAN this deadly substance, ASBESTOS, from commercial use if we are to stop this continuing epidemic of disease and death. I conclude by quoting the very eminent British public health statistician, Sir Bradford Hill who said in 1965--and I might add this still applies today: ``All scientific work is incomplete--whether it be observational or experimental. All scientific work is liable to be upset or modified by advancing knowledge. That does not confer upon us a freedom to ignore the knowledge we already have, or to postpone action that it appears to demand at a given time.''

That time is now and the action we must take is clear.

Prepared Statement of Mr. John Addison

I am an independent scientific consultant working in the field of mineralogy and health. I was the Head of the Mineralogy Group at the Institute of Occupational Medicine, Edinburgh, for fifteen years. The IOM is one of the foremost charitable research organizations in the world. My responsibilities there ranged from the analytical measurement of dusts in the occupational environment, including all of the asbestos minerals, to characterization of asbestos and other minerals used in carcinogenicity testing, and the determination of asbestos in human and animal tissue samples.

For about the last 20 years I have been a member of the UK Health and Safety Executive, Working Group that has developed and drafted the formal methods that are currently used in the UK for identification of asbestos in bulk samples and in airborne dusts. I am recognized internationally as an expert on the asbestos minerals and have testified previously in US Federal hearings with respect to the definition of asbestos in OSHA regulations, and in particular to the issues related to the non-asbestos forms of amphibole minerals.

There are many complex issues involved in the measurement of asbestos in dust and bulk samples, but one of the most important distinctions that must be made is that between the asbestos minerals in the amphibole mineral group and their normal non-asbestos analogues; these are minerals with effectively the same chemical composition, but with subtly different crystal structures that lead to the very different physico-chemical properties, and different toxicological behavior. These differences have led to the clear distinction being made between asbestiform amphiboles and their non-asbestos analogues in the regulatory framework for asbestos in the USA, UK and much of the rest of Europe. One very important aspect of the issue is that all of the amphibole minerals have the property of forming crystal fragments that may meet the size definition of a regulatory fiber, but that does not mean that these fragments are asbestos, nor does it mean that they have the toxicological properties of asbestos. Within this context it was entirely appropriate that the fiber counts performed by OSHA for regulatory purposes discriminated between the cleavage fragment fibers of amphiboles and true asbestos fiber. Such a distinction is not only appropriate, but is essential for the proper regulation of large numbers of industrial rock and mineral procedures within the USA since many of these contain amphibole minerals that will naturally produce cleavage fragment fibers that meet the regulatory size criteria. These also are not asbestos.

Having previously advised The Vermiculite Association on issues related to amphibole and asbestos minerals, I was invited by Mr. Ned Gumble of Virginia Ven-niculite to assist him when it became apparent that there were possible asbestos outcrops within the ore-body of the mine. Over the past two years I have spent about 15 days working at the mine, inspecting the ore body and personally explaining to every member

of staff the health effects of asbestos, methods of identification, airborne dust monitoring and many other aspects of asbestos science.

I confirmed for Virginia Vermiculite that a tremolite asbestos variety, did indeed occur as thin veins within the ore body, but these were not persistent and only sparsely developed in terms of the whole mass of ore. Since the thin tremolite veins could be recognized by an experienced operator, they could be removed when encountered and would not contribute to worker dust exposure during processing. Even if the tremolite asbestos veins had simply been mixed in with the ore material for processing it is unlikely that the tremolite asbestos would have been detected by conventional US asbestos methods. Other small occurrences of an actinolite asbestos also appeared to be found at the margins of intrusive masses of granitic rock that are found cutting the main rock mass of the deposit. Once again these asbestos occurrences were not persistent and only sparsely developed. Since granitic rocks have no value as a vermiculite ore they would not normally be disturbed, nor would there be any value in their processing.

Towards the end of my visits I recommended that Virginia Vermiculite should request a visit from Dr. Malcolm Ross, probably the leading authority in the world on asbestos minerals, and formerly of the US Geological Survey. He confirmed all that I had found, and furthermore suggested that such asbestos occurrences are widespread throughout the Appalachian Mountains and the Piedmont areas. In these circumstances it is almost impossible to exclude absolutely the possibility of asbestos occurring in any mineral or rock development, but that does not mean that all such developments should cease, only that sufficient care and attention must be paid to the proper management of the asbestos problems. It is clear to me that in their considerable efforts to identify their problems, to manage the asbestos in their mine, and to minimize the possible health effects on their workers, Virginia Vermiculite have set an excellent example.

Prepared Statement of Mr. George Biekkola

Senator Murray and members of the committee, my name is George Biekkola from L'Anse, Michigan. I'm 67 years old, and I have asbestosis.

I began working for the Cleveland Cliff Iron Company in Michigan in 1964. After almost 30 years on the job, I had to retire early--because of my disability.

I've got to tell you--this isn't how I planned to spend my retirement.

I'm married, I have four children, and five beautiful grandchildren.

I'm an active person. I coached little league and youth hockey. For several years, I volunteered my time and helped our community build a new recreation center. Currently, I'm a crew leader in the Americorps program at Camp Alberta.

I like being able to do things for myself. But these days, when the lawn needs to be mowed or the snow needs to be shoveled, I can't do it. I just don't have the strength because my lungs are filled with asbestos fibers and they are scarred from years of exposure.

My doctor tells me that I only have two-thirds the lung capacity I used to have. My heart already has to work overtime to distribute oxygen through my body. I can't exert myself.

I have been very careful that I don't catch pneumonia or any lung condition--because my lungs aren't able to fight off infections.

As I said, this isn't how I thought I'd be spending my retirement. I thought my wife and I would buy a motor home and travel out West. I pictured myself up in the mountains hunting deer.

But today, even if I could afford it, my body wouldn't be able to take it. If I exert myself too much, I begin to feel a burning in my thighs. They're the largest muscles and the ones that become depleted of oxygen first.

This isn't how I thought I'd be spending my retirement, but when I think about the other guys I worked with--I guess I came out lucky.

Like my friend Dale Roberts. He was an electrician. We used to eat lunch together. He was so excited to retire. He was going to help his son run a portable saw mill. He was a healthy guy. He retired in 1992. Six months later, he was dead. The asbestos cancer wrecked his left lung. He went into the hospital, and a week later, he was dead.

I'm also luckier than my friend Joe Brogan. Joe and I carpooled to work together. Joe retired, and I think it was two weeks later--he too was dead of asbestosis.

Senators, I could give you more names. In fact, when I finally took the mining company to court a few years ago, I brought with me a stack of a few hundred death certificates.

I didn't know about the dangers of asbestos. I didn't know the toll it was taking on my lungs and my life. I'm here today to tell you my story so that maybe someone else working in a mine--or a brake shop--or a factory--won't lose the things I have lost; Won't lose the things those men and their families have lost.

Because it takes 20 to 30 years for the scarring in the lungs to show up on an x-ray, many people aren't aware of the problem.

Most Americans think asbestos is no longer a danger. But they're wrong. Today many types of asbestos and asbestos-like fibers are still used in manufacturing and are still ruining the health of workers like me.

Companies will tell you asbestos is not a problem--just like they told me. ``Go back to work George. There's nothing to worry about,' ' they said.

Senators, they lied. We need to worry about asbestos--and we need our government to protect us--because businesses--on their own--won't always do the right thing.

As I mentioned, I started working for the Cleveland Cliff Iron Company in 1964. Over the years, I worked in three mines: the Humboldt, Republic and Tilden. I started as a hard rock driller. I drilled through the rock. Often that rock had veins of asbestos--a grey, flaky, smooth material.

Sometimes you would be breathing the raw asbestos that you just drilled through. The dust would get all over you--in your face--in your mouth--down your throat. You couldn't help it. There wasn't safety equipment. If you were lucky you'd come across a paper mask like this one. But even with a mask on, at the end of the day, you'd blow your nose and all this black dust would come out.

Because my job didn't pay much, I worked overtime whenever I could and that exposed me to even more asbestos. Whether I was repairing the giant kilns or working in the crushers, I was often surrounded by clouds of white dust--clouds of asbestos.

Eventually, I became trained in electronics, and I worked in the mines and factories repairing equipment. Often, that equipment was wrapped in asbestos to insulate it from the heat. I brought some examples with me. Here is an asbestos gasket. And here is a piece of thermalcouple wire, which is covered in asbestos. I handled these throughout my job.

In 1987, the mining company had many of us x-rayed. My x-ray showed asbestos in my lungs, but the company doctor and a lung specialist told me not to worry about it.

Around 1990, I went to see Dr. Michael Harbut. He told me the truth about my asbestosis, and he told me get out of the mine.

I went back to the company with this information. I thought they'd put me on compensation. Instead they rejected his report and said--your job is here, be at work tomorrow. And that was that.

Later, I went to the Mayo Clinic in Rochester, Minnesota for several days of tests. I brought those results back with me to the mine. The personnel man laughed and pushed it away. He said, throw that in the basket because its just a bunch of garbage.

Because of my disability, I retired at age 60. Today, I can't do the things I want to do for myself and my family.

Because it takes a long time for asbestosis to appear, in the coming months a lot of workers are going to diagnosed. I just wish the company would be more responsive to those workers and their families and not wait until those workers have died.

I hope that this Committee will make sure that what happened to me won't happen to anyone else. Please raise the safety standards and keep a better eye on these companies. Help spread the word about the dangers of asbestos.

Workers like me are counting on you to protect us. Please don't let us down.

Thank you.

Prepared Statement of Michael R. Harbut, M.D.

My name is Michael Harbut. I am a Doctor of Medicine and a teacher at the Wayne State University School of Medicine in Detroit, Michigan. I'm also a Past Chair of the Occupational and Environmental Health Section of the American College of Chest Physicians and am a Board Member (as Congressman Bruce Vento) of the Mesothelioma Applied Research Foundation.

Each year I have approximately 3200 ``contacts'' with patients who are ill as a result of their occupational or environmental exposures. Hundreds of these patients have asbestos-related diseases or cancers. Most of them die before they were meant to. My remarks, therefore today, are not only from the perspective of a physician who knows that much of the sickness and death that he daily confronts was preventable, in honesty, I'm also angry at the industry and its friends in high places who have allowed this carnage to occur.

I want to speak briefly about what asbestos fibers are and what they do when inhaled. Now, it is quite commonly known that asbestos fibers cause scarring of the lung and lung cancer. What is less commonly known is that persons with significant asbestos exposure have an increased overall death rate from all cancers. Asbestos fibers are microscopic airborne needles, which penetrate the delicate tissue of the lung and have been identified in every organ of the body.

Anywhere from a handful of years to decades later, persons with asbestos related disease develop a thickening on the covering of their lungs, their smaller airways become narrowed, and then the membrane over which oxygen passes to the bloodstream becomes thickened, increasing the work of breathing. They become short of breath at climbing a few stairs, they can't walk from the shopping center lot to the store without stopping and before too long, and any exertion can cause a profound shortness of breath. Many patients ascribe the symptoms to ``just growing old.'' If they do seek medical attention, a diagnosis of asbestosis is rarely rendered. There are several reasons for this.

Firstly, even for trained physicians, it can be a tough diagnosis to make. Notwithstanding the mass tort litigation where an asbestosis diagnosis may be less than reliable, a real asbestosis diagnosis made by a real doctor just doesn't happen that often. One of the reasons is that sometimes there are problems in identifying the asbestos fibers,

one of the reasons why we are here today.

Even if a patient has all the clinical signs and symptoms of asbestosis, there is sometimes inadequate data to confirm the presence of what the Government has decided constitutes an asbestos fiber. These are sometimes called asbestiform fibers and in some cases, the inhaled dust may contain a percentage of asbestos below what was previously believed to be harmful or may be regulated as a 49 particulate not otherwise classified.'

To illustrate this, please see the x-rays I've brought. The first demonstrates a normal lung, the second a patient with early, but definite asbestosis. You'll see that the third is quite similar to the second, demonstrating what appears to be early, definite asbestosis, but when we asked this patient's left lung after it was transplanted, we found no asbestos fibers, but we did find a number of ``cousins'' of asbestos. This x-ray also shows what the inhaled dusts have done to the surviving lung over a period of 10 years. The fifth film shows also what appears to be an early, but definite asbestosis in a miner from Michigan's Upper Peninsula. He wasn't given this diagnosis by the courts, however, because his exposures fell below MSHA's notice. The next film shows an advanced asbestosis in a Steelworker and the last film demonstrates asbestosis in an Autoworker who made brake shoes.

Diagnoses are also not made for insurance reasons. Once a patient receives a diagnosis of asbestosis, it's a fair bet the doctor and hospital will have a very hard time getting paid for care; the patient can be thrust into a compensation system that rarely rules in his/her favor; and the patient's ability to acquire health or life insurance is severely impaired.

So not only have these patients been assaulted by the fibers, they are assaulted by the law. They are also assaulted by funding policies for research. As an example, for every 6 breast cancer deaths, the National Cancer Institute is funding a study. There is one study funded for every 80 mesothelioma deaths. Mesothelioma is the relentless cancer of the covering of the lungs and intestines caused by asbestos which is usually found at autopsy, but when discovered before death, confers an average life expectancy of 6 months. A death from a fiber inhaled 40 years earlier.

In my remaining moments before you I'd like to make a few suggestions which I think would help alleviate illness, suffering and preventable death in our generations and those of our children.

Firstly, the Government should convene a panel of scientists and clinicians who know a lot about asbestos, its cousins and the disease they cause. One requirement of membership of physicians would be that they have treated at least 100 persons with asbestos-related disease over the previous 5 years. The panel would study all diseases which present clinically as does the 2001 brand of asbestosis, identify the precise fibers causing them, and recommend their appropriate regulation.

The panel would also look at the health, compensation and insurance issues growing out of asbestos and asbestiform exposures and make appropriate recommendations.

Finally, the Government should immediately encourage the refocus of at least some of its resources on the prevention, early diagnosis and someday, cure of asbestosis and mesothelioma. Prevention actually is an easy one. Just ban the use of asbestos in the United States, as have nations all over the world.

For decades, the society, the Courts and much of the Government have regarded asbestosis as a legal inconvenience. My patients and I ask you to understand that to them and their families, asbestosis means disease and death.

Prepared Statement of Alan Whitehouse, M.D.

My name is Dr. Alan Whitehouse. I am a chest physician/pulmonologist from Spokane, Washington, board certified in internal medicine and chest diseases and have been practicing pulmonary medicine in Spokane since 1969. Spokane is 160 miles from Libby, Montana, and is the primary referral source for patients with lung disease from the Libby area and much of Western Montana. I have been privileged and saddened to have taken care of many people from Libby who have asbestosis.

Libby was the site of the W.R. Grace Corporation vermiculite mine, located about 6 miles from Libby. Libby itself is nestled in the valley of the Cabinet Mountains of Northwestern Montana, a relatively uninhabited site except for Libby. The mine employed several thousand people through the years and was originally operated by the Zonolite Corporation and purchased by W.R. Grace in 1963.

Vermiculite is an insulating compound, which has very common usage for insulation, soil conditioning and in fertilizers. The ore body of the W.R. Grace mine also, unfortunately, contained up to 27% tremolite asbestos. Tremolite is an asbestos, that falls in the category of amphiboles as opposed to serpentine asbestos, such as chrysotile, which is the commercial variety of asbestos.

The insulating material, vermiculite, is produced by heating the ore or "popping it" after attempts are made to separate the tremolite asbestos from the ore body itself. This compound, which many of you are familiar with is a very light, airy compound, which has excellent insulating properties.

Unfortunately, all of the tremolite asbestos cannot be separated from the vermiculite itself and the great majority of vermiculite that was produced as a commercial product for insulation purposes contained significant amounts of tremolite asbestos. Both the partially refined ore and the relatively finished product known as Zonolite, which was the vermiculite insulating material, was sent throughout the country. The ore was sent to approximately 60 expansion plants where it was popped or expanded and made into the vermiculite insulating material. Unfortunately the finished product contained significant quantities of tremolite asbestos and was shipped throughout the country for various forms of insulation from both Libby and the 60 ore expansion plants.

Evidence in animal research indicates that tremolite is much more toxic than chrysotile and my own patient data on a large number of patients with both forms of asbestosis would confirm the same. It creates an intense inflammation of the lining around the lung called the pleura as well as producing fibrosis and scarring within the lung itself. There is a latency period from the time of exposure of anywhere from 15 to 40 years from the time of last exposure. It frequently begins with what are called pleural plaques, which are areas of thickening or scarring of the pleura.

It may be scattered or may be confluent around the surface of the lung. These may become very diffuse thickening of this lining of the lung, which results in the inability of the lung to expand, somewhat like you would see an orange peel around an orange.

There may also be scarring in the framework of the lung, called the interstitium, which is the framework that supports the air sacs. When this becomes scarred, it prevents the lung from expanding and also prevents gas exchange of oxygen and carbon dioxide. People that have progressive asbestosis die of a variety of illnesses. One of the most common is lung cancer. Additionally, about 3% will die of mesothelioma, which is a cancer of the lining of the lung. Many will die of respiratory failure, which is basically a form of suffocation due to inability to oxygenate your body properly.

Unfortunately, vermiculite with this contaminate, tremolite asbestos, was scattered throughout the entire Libby area. It was present around an expansion plant, near downtown Libby. It was present along all the rail lines where the Great Northern, Northern Pacific and subsequently the Burlington Northern passed. It was loaded into rail cars at the Burlington Northern both in town and in other sites near Libby. It was used throughout the community as a soil conditioner. It was placed on the playground of the schools to help condition the track. It was placed in large quantities in the ballfield and was worked on a daily or every other day basis for long periods of time in the process of keeping the grounds suitable for playing baseball.

It was available free to the community to use in attic insulation and many of the homes in Libby are insulated with vermiculite. The children played in the piles of vermiculite for many years. A favorite was to pile vermiculite on the rail line and wait for the train to come by, which would cause a swirling cloud of dust. They would also jump from ropes into large piles of vermiculite similar to what you did when you jumped in leaf piles when you were a child. These were fairly heavy exposures to asbestos but unfortunately there is also a significant number of people that have asbestos related disease in whom the only source of asbestos that you can find is that they lived in Libby, Montana, and neither played in it as a child nor were employed by Grace or lived with families of miners.

Through the years, especially since 1980, I have seen a number of miners that had worked in the plant who had asbestosis. It was thought until the last 5-7 years that this disease had been confined to the miners. There were several family members who obtained asbestosis from the dusty clothing the miners brought home from work, but beginning 10 years ago I began to see more patients who were family members of the miners and had developed fairly severe asbestosis and some had actually died of it. In the last 5 years I have seen an alarming number of patients from Libby who had no direct exposure to the mine or to the miners who had asbestosis but obtained the disease from living in Libby, Montana.

These included children who played in the vermiculite, those who had worked around the rail lines, a number of railroad workers for the Burlington Northern, a number of loggers who had logged in the woods around the W.R. Grace mine property, men who worked in the lumber mill where they had used vermiculite insulation on the plywood dryers, people who lived next to the expansion plant or the storage bins and people who just lived near downtown Libby who could not be identified as having a significant other exposure.

I have been collecting a data base for a number of years and currently have 396 cases in that data base. They range all the way from patients with a few pleural plaques to people who have died of this disease. About 200 of these are miners, 93 are family members of miners, but 103, or approximately 25% of these patients are people who have never worked for Grace and whose exposure was environmental only in Libby. 24 of my patients have died in the last 3 years and 5 of these were people who only had the environmental exposure. One was a family member, 18 were miners.

It is clear from this data that people can obtain severe asbestosis with what would appear to be relatively minimal exposures to tremolite.

As you may know, there has been a screening study done by EPA and ATSDR, which is a branch of the CDC, screening approximately 6000 people in Libby who had lived within 6 miles of the town or the mine.

Initially it appears as if there are between 20 and 30% of these x-rays that are abnormal, although final numbers are not available at this point. Some of these patients show up in my case series. The rest of them are being seen in the Center for Asbestos, Related Diseases in

Libby, which is being Supervised by Dr. Brad Black, a very competent Libby physician. These numbers from reviewing x-rays in Libby with Dr. Black are going to be close to being correct and so there will likely be another 1500 people with abnormal x-rays added to my 400 and there will be another 2000 to 3000 people screened again this summer.

It is easily conceivable there will be 2000 people in the Libby environs who have abnormal chest x-rays ranging all the way from a few pleural plaques to diffuse pleural thickening to interstitial asbestosis and going on to death.

Asbestosis is a progressive disease. It is not known whether everybody that has pleural plaques will develop severe disease or not. It is clear that over 100 of my patients have severe disease and that about 75% of my patients with even mild disease are having progressive loss of pulmonary function taking into the consideration the changes in their function that goes along with age. This 75% are losing approximately 3-5% of their lung function per year over and beyond what would be expected from aging. These are people with only mild disease and whose pulmonary function studies are greater than 80% of predicted. This data suggests that the majority of people who have an abnormal chest x-ray in Libby are going to progress to fairly significant or fatal asbestos related diseases.

It is clear that you can get asbestosis from what was thought to be a minimal exposure. Tremolite is a considerably more toxic fiber than chrysotile and it may not take nearly as much exposure to get severe disease. Tremolite is a contaminate in some of the chrysotile and has been found in some brake linings that have been studied recently. Tremolite is present in many places throughout the nation in the attic insulation where Zonolite was used. It is still, unclear how severe a problem this is, although the data from Libby would suggest that it may not take much exposure to get asbestosis. I have one patient whose only exposure to tremolite was from their attic insulation.

I would urge this panel to recommend there be a considerable review of how we deal with and regulate all forms of asbestos in this country. We have huge amounts of asbestos present throughout this nation. It is being used commercially and it does not appear from the data we have from Libby there is anything such as a safe level of asbestos in the air. It may very well be we are still contaminating large numbers of people, particularly with tremolite or other amphiboles without actually knowing it.

The W.R. Grace Corporation was very well aware of the extent of the asbestos contamination of their miners and of the town of Libby throughout the entire period of operation of the mine. There may be other similar places in this country where a significant amount of asbestos contamination is occurring either known or unknown.

Because of the long latency period of asbestosis, it is likely we are going to continue to see new cases of asbestosis or rapid progression of the disease occurring as late as the year 2030.

Prepared Statement of David Pinter

Members of the Senate, Ladies and Gentlemen, my name is David Pinter of Louisa, Virginia. Before I quit two months ago out of fear for my health, I worked for Virginia Vermiculite for more than 22 years.

I was a heavy equipment operator and mechanic and worked every day excavating and loading vermiculite for processing at the plant. I also loaded and distributed the waste rock that was left over at the end of the processing and several times a week I hauled the processed ore through the town of Louisa to dump it at an uncovered stockpile near the town or load it on box cars to be shipped all over the country.

Every day I worked in clouds of dust doing each part of my job. Some days the dust was so thick I could barely see. Never in the 22 years was I given any protective clothing or respiration equipment.

When I would excavate the vermiculite to begin the processing, I would see veins running everywhere through the ground of whitish-gray fibrous material that was much lighter than the surrounding rock and sometimes almost fluffy in consistency. A lot of this fibrous material ended up in the waste rock and a lot of it ended up going into the process that put it into the downstream product. I have samples of this stuff in the jars sitting here in front of me.

For as long as can remember, there have always been rumors in our community that the vermiculite we were handling was contaminated with tremolite asbestos.

The company owners assured the workers and the people of the community that this was not true and that we were safe. No one thought the company would lie to us and, as a result, all of us put our fears aside and continued to work unprotected. I now know that tests conducted by the W.R. Grace Company going back to the 1950's showed heavy concentrations of tremolite asbestos in the Louisa deposit. W.R. Grace controlled this deposit before Virginia Vermiculite took it over.

Only 20% of the material we dig up becomes useable vermiculite ore. That leaves 80% of every ton of excavated earth as waste rock that accumulates at the plant site. Each year we produced up to 50,000 tons of vermiculite. This left 200,000 tons of waste rock that had to be disposed of annually. The management of Virginia Vermiculite decided that a good solution to this problem would be to give it away to the public as free gravel. For 22 years I watched people come in with their own trucks to be loaded with this waste rock, or management would send dump trucks full of waste rock out each day to be dumped on peoples' driveways, parking lots, and in public areas such as the local library and fairgrounds. Usually about 100-300 tons of this material was spread around Louisa County and the neighboring counties each day. As I told you before, all of this waste rock contained large quantities of the whitish-gray fibrous material.

In the fall of 1999, I began to see all the news about how the vermiculite workers and their families were dying in Libby, Montana from exposure to tremolite asbestos. This scared all the workers at the plant, but management continued to tell us we had nothing to worry about and that there was no tremolite in the Virginia deposit.

Some months later, an inspection team from MSHA showed up to check for asbestos exposure. They seemed shocked at what they found. I heard someone say ``This looks more like an asbestos mine than a vermiculite mine''. It turned out that the white-gray fibrous material we have been working in all these years was indeed tremolite asbestos the same as at Libby, Montana, and citations were issued against the Company because of the worker exposure. The MSHA tests later showed the tremolite to be in concentrations of up to 99%. The inspectors said the workers needed to be in protective clothing, use respirators, have dust free cabs on all equipment and have on-site showers and other decontaminating equipment provided. They also made management put red flags and orange cones out to mark the dozens of veins of asbestos which criss-cross the property. These veins range in size from less than an inch to one which is six feet high and two feet wide. Usually the best quality vermiculite is under and around these asbestos veins. Management was visibly annoyed at having these rich parts of the deposit ``off-limits''.

As I understand it, management told MSHA they agreed to all of MSHA's safety requirements. However, management actually ignored the safety requirements and most of them have never been carried out. The red flags and orange cones were set out to mark the asbestos veins, but

no protective clothing or respirators were ever issued to the men and there is almost no protective equipment in place.

Since January, however, MSHA and EPA seem to have lost interest in the tremolite asbestos problems at Virginia Vermiculite and management seems to appreciate this. For example, on Inauguration Day, 2001, the bosses at the plant were joyful and ordered all the red flags and orange cones removed from the barricaded area where the asbestos veins were and the workers were told to excavate through the asbestos as they always had before. When the plant manager ordered this I heard him say ``We don't have to worry about MSHA any more. From now on they'll be behind us every step of the way. They won't cause us any more trouble.'' Once again, all the tremolite went into the product for down stream consumers of garden and lawn products, medicated powders, fire board, brake shoes, aggregate and numerous other common products

Everyone talks about what a tragedy Libby, Montana was and how it can never happen again. Well it, is happening again right now. it is happening under your noses just two hours from where you are sitting. We are not dead yet because the mining in Libby began 25 years before they started in Virginia, but it is coming. The end of the incubation period for asbestos disease is almost at hand. All the plant workers since 1978 have been exposed and hundreds of people in the town and county are being exposed daily. It is probably already too late for many of us, but you need to shut this mine down, and require the company to thoroughly decontaminate the mine and mill site. You also need to require the company to disclose every location where they spread their waste rock and to clean up those sites too. This is the only way to protect all those who have not yet been exposed.

Richmond, VA,
July 27, 2001.

Hon. Patty Murray,
U.S. Senate,
Washington, DC.

Dear Senator Murray: My name is Joseph Heller. I am 53 years old. I am a lifetime resident of Richmond, Virginia. Last year, I was diagnosed with mesothelioma, an incurable cancer caused by exposure to asbestos.

Beginning in 1965 and continuing until last year, I have worked either as an automotive mechanic or parts man. Those have been my only trades, and the only way in which I know I was exposed to asbestos. In 1973, I began working as a mechanic at an Oldsmobile dealership in Richmond. Ever since 1973, I have worked primarily for General Motors dealerships, either Oldsmobile or Pontiac. Until 2000, I was very proud to be a GM mechanic. In fact, despite my diagnosis with mesothelioma last year, I attempted to return to work but was unable to perform my job without becoming exhausted. I have always loved working on cars, and not being able to work for a living or do what I enjoy depresses me everyday.

During my career as an automotive mechanic and parts man, I do not recall ever being warned about the dangers of asbestos. I do not recall ever seeing an asbestos warning on boxes of Bendix brake linings I used between 1965-1972, nor do I recall such warnings on boxes of GM brakes between 1973 and 2000. From 1973 until 2000, I went to several GM mechanic training classes, and was never warned in any of those GM mechanic training classes about the dangers of asbestos. I have since learned that Bendix (now Honeywell company) and GM have both known since at least the 1960s that exposure to asbestos causes mesothelioma, and that GM was aware of the overall dangers of asbestos since at least the 1940s. I worked for a Bendix distributor, Richmond Battery, from

1965-1972 and again for a short time in the late 1970s-early 1980s. I would have thought that both Bendix and GM would have been inclined to at least tell their distributors and dealership mechanics about the extreme dangers involved with the handling, manipulation, and installation of their brake and/or clutch linings. I received no such warning from either Bendix or GM, despite the nature of my employment, which brought me in nearly daily contact with their asbestos-containing friction materials. As a result of those exposures, I now have only a short time to live.

I now understand that some brake manufacturers, including Bendix and GM, began putting cautionary labels on their brake packaging in the mid 1970s. Although I don't recall such labels, the cautionary labels evidently stated something about the need to avoid creating dust and that the dust could cause potential bodily injury. I learned this when I was cross-examined in a deposition by Bendix and GM lawyers recently (which lasted over 7 hours). Such warnings are inadequate for two reasons: 1. The labels do not inform of the danger of using such products, and 2. There is no mention of cancer or potential death from breathing dust from such products.

Such ridiculous cautionary warnings also ignore the obvious to anyone who has done professional mechanic work in the past: It is impossible not to have some dust released when doing brake or clutch work, no matter how careful you are. Beginning in the mid-1970s, I was trained not to blow out the brake drum with an airhose anymore, and I was also told not to grind brake linings. It was not explained to me why such procedures were implemented at my GM/Oldsmobile dealership in the 1970s, but I followed them. Still, dust is released when you remove drum brake covers, disc brake assemblies, clutch housing assemblies, and new brakes or clutches from boxes. Some dust is unavoidable with brake and clutch work. As I understand my disease, doctors do not know how much exposure to asbestos it takes to cause mesothelioma. If that is true, why do brake and clutch product manufacturers still use asbestos in some of their friction materials when alternatives are available and they know some dust is unavoidable in using their friction products? Isn't the possibility of getting mesothelioma enough reason to completely eliminate the use of asbestos in friction materials altogether?

Senator Murray, I live everyday with a time bomb. I wait for the day my mesothelioma begins to spread throughout my body and cause the pain and extreme shortness of breath that will eventually lead to an excruciating death. I fear it, and there's nothing I can do to stop it. I've already endured 4.5 months of chemotherapy that overwhelmed me with exhaustion, sleepless nights, and nausea. Perhaps you can do something, though, to make sure no other people working as automotive mechanics get this terrible disease.

I thank you for your time.

Sincerely,

Joseph T. Heller.

Response to Questions of Senators Kennedy and Murray From EPA

1. (A) How has EPA used the experience of Libby, Montana to correct current exposure threats and to prevent a tragedy like this from happening anywhere else?

(B) What are the results of EPA's inspections of the three other vermiculite mines and other mines where asbestiform fibers may be present?

(C) Has EPA relied on transmission electron microscopy for these

tests, as recommended in the Inspector General's report?

(A) EPA has used the experience of Libby, Montana, to supplement its standard operating procedures under the Superfund site evaluation process. EPA Regions have responded to potentially contaminated sites using a cross-office, multimedia, integrated program approach to site evaluation and response. As part of this effort, EPA Headquarters has coordinated closely with the Regions, other EPA program offices, and other federal partners to conduct regular meetings, track the progress of site reviews, and ensure that current exposure threats are being addressed by the most appropriate authority.

EPA is working with other federal, state, and local authorities in efforts to consider locations and industries other than Libby, Montana which might pose similar threats to public health and the environment. EPA's Office of Solid Waste and Emergency Response (OSWER) is collaborating with the Mine Safety and Health Administration (MSHA), Occupational Safety and Health Administration (OSHA), the National Institute of Occupational Safety and Health (NIOSH), Agency for Toxic Substances and Disease Registry (ATSDR), Consumer Product Safety Commission (CPSC), states, and other partners who can provide or analyze information about public health and environmental contamination.

ATSDR and EPA have determined that a review of county health data may be a useful tool to identify other asbestos-contaminated sites like Libby. EPA will closely monitor this effort once it is initiated to appropriately direct resources to sites with serious public health impacts.

(B) With respect to EPA's investigations of additional vermiculite mines, we have confirmed the following results:

Louisa, VA: EPA conducted field sampling in Louisa, VA, at the Virginia Vermiculite Mine, LLC in May 2001. Samples were collected in and around residences in the area of the mine and along roadsides and rail sidings. MSHA also collected samples on site to determine potential exposure for workers.

MSHA samples identified limited, highly concentrated and discrete deposits of amphibole asbestos material in the mine. The amount of contaminant as a percentage of the total ore/aggregate volume appears to be extremely low. EPA samples did not identify any measurable levels of asbestos fibers migrating off site. Therefore, Superfund has determined that no further program action is warranted.

Carolina Vermiculite, SC: EPA visited the site and took samples on June 6, 2001. Lab personnel collected samples from the mine/ore body, from the processor, waste ``slime,'' and beneficiated (concentrated) vermiculite product. No measurable levels of asbestos fibers were detected in the samples. Superfund has determined that no further program action is warranted.

WR Grace/Enoree, SC: EPA visited the site and sampled on June 6, 2001. Lab personnel collected samples from several mine sites and different ore deposits, from the processor, waste ``slime,'' and finished product. No measurable levels of asbestos fibers were detected in the samples. Superfund has determined that no further program action is warranted.

With respect to non-vermiculite mines and industries, OSWER is working with MSHA, OSHA, NIOSH, ATSDR, CPSC, US Geological Survey, states, and other partners to explore the potential universe of mining and mine-related sites with asbestos contamination.

(C) EPA has relied on transmission electron microscopy for these tests as recommended in the EPA Inspector General's report. In a guidance memo from July 2000, OERR established a national protocol to analyze bulk samples for asbestos using a combination of Polarized Light Microscopy (PLM) and Transmission Electron Microscopy (TEM). In

addition, OSWER has audited the labs which are performing these evaluations to ensure consistency and reliability of analytical results.

(2) In a June 28, 2001 memo from you to EPA Inspector General Nikki Tinsley, you wrote that EPA will develop an Action Plan For determining a need for a NESHAP for contaminated asbestos. Has that Action Plan been finalized? Does EPA still believe the Action Plan will be completed by January of 2002?

EPA's Office of Air Quality Planning and Standards (OAQPS) is currently developing the asbestos NESHAP Action Plan. EPA still expects the asbestos NESHAP Action Plan will be completed by January of 2002. We will be glad to meet with you to discuss any questions you may have regarding the Action Plan.

(3) EPA participated in an Asbestos Health Effects Conference in May of this year. Can EPA please summarize some of the key findings that came out of this conference?

In May of 2001, EPA organized an international asbestos health effects conference, along with co-sponsors from the National Institute of Occupational Safety and Health (NIOSH), Agency for Toxic Substances and Disease Registry (ATSDR), Mining Safety and Health Administration (MSHA), and California EPA. The conference was organized to review the state of the science on asbestos health effects and served as the first step in EPA's update of our toxicity assessment for asbestos. A number of discussions at the conference focused on the importance of asbestos fiber dimensions and fiber type in relationship to asbestos-related disease.

EPA will use information gathered at the conference to update the Agency's asbestos toxicity assessment. As a first step in this process, EPA currently is updating the cancer risk assessment methodology for asbestos. This draft risk updated assessment methodology will be submitted for independent external peer review in 2002. We will be glad to meet with you to discuss any specific questions you may have about the conference or the update of EPA's toxicity assessment for asbestos.

(4) Are the other nine regions of EPA taking full advantage of the expertise on contaminant asbestos that Region 8 has developed because of its work on Libby? If so, how?

Starting in January, 2000, EPA HQ began to plan, coordinate, and conduct bi-weekly meetings for this project. Invitations were sent to all EPA Regions, representatives of EPA program offices, and other parties to ensure thorough sharing of information and experience. This coordination effort included guidance documents to the Regions on national standards for site identification, assessment, and priority-setting; sample collection and analysis; and other relevant issues.

As we gathered additional information on the asbestos contamination in Libby, related processing facilities and likely contaminated areas, EPA HQ made certain that the information was shared with all of our collaborators and partners in for appropriate follow-up. In addition, EPA organized an international asbestos health effects conference to review the state of the science on asbestos (see response to third question, above).

(5) The Committee has concerns that the inspections EPA has undertaken so far are too limited. In particular, the 1/4 mile radius in which EPA is currently undertaking inspections could be increased to a radius such that all contaminated areas are included. Please let the Committee know if EPA will agree to expand its inspections in this manner. If EPA does not agree to expand its inspections, please include in your response a detailed explanation of the Agency's reasons for declining to do so.

EPA HQ is not aware of a specific 1/4 mile radius limit to the inspections conducted as part of this effort. The Regions have

collected bulk and soil samples in areas surrounding the facilities or in places where workers, residents or business records indicate that waste may be located. EPA does not believe that any EPA Region has failed to consider evidence of contamination which may be present more than 1/4 mile from the facility under investigation.

Response to Questions of Senator Wellstone From EPA

1. I want to ensure continued aggressive efforts to clean up the areas in Minneapolis, Minnesota, that have been contaminated as a result of the operations of the Western Mineral products plant located at 1720 Madison Street. Do I have your assurances that EPA will continue its work until all contaminated properties are cleaned up?

Yes. EPA has been working closely with the State of Minnesota to address all contaminated properties associated with the Western Mineral Products Plant at 1720 Madison Street in Minneapolis. This work is projected to continue for at least the next fiscal year. In addition, EPA understands that ATSDR and the State plan to evaluate the potential health impacts of this contamination on the residents and former workers at this facility.

2. The Committee has reviewed information indicating EPA originally investigated 61 sites in Region 5 for contamination from Libby vermiculite, but EPA determined only the Western Minerals site requires further action. Is EPA aware of any other sites in Minnesota that should be investigated for asbestos exposure from the Libby vermiculite mine or from elsewhere? If so, please let me know where these sites are and what EPA's proposed course of action with respect to these sites will be. Are there any sites in Minnesota that have been called to EPA's attention as possibly at risk of asbestos contamination, but which EPA has declined to investigate? If so, please supply the location of these sites and EPA's reasons for declining to investigate.

In December 1999, EPA Region 8 notified EPA HQ of concerns about asbestos contamination in the vermiculite ore from Libby, Montana. EPA HQ began a process to identify exfoliators and other facilities which used vermiculite ore. EPA gathered data from the US Geological Survey (USGS), Bureau of Mines, W.R. Grace, and other sources. Regional investigation narrowed the possible list and corrected the errors in this data until we were able to complete a national list of 244 potentially contaminated facilities.

EPA has identified 61 sites in Region 5 which processed or used vermiculite ore. Following an initial review of these sites, EPA determined that 14 of the 61 sites warranted collection of asbestos samples. After reviewing the sampling results, EPA determined that 10 of the 14 sites did not require further action. Three of the 14 sites are still under investigation, and one of the 14 sites is currently undergoing a response action (Western Minerals).

A total of 13 out of the 61 sites in Region 5 are located in Minnesota. Region 5 took samples at 3 of these (B.F. Nelson, Western Minerals, and Certain Teed/Diversified Insulated.) EPA is not aware of any vermiculite processing facility in Region 5 or Minnesota with a high likelihood of asbestos contamination which EPA has declined to investigate.

August 14, 2001.

Sen. Patty Murray,
Senate Health, Education, Labor and Pensions Committee,
U.S. Senate, Washington, DC.

Dear Senator Murray: I am enclosing the following statement for inclusion in the record of the hearing on asbestos and asbestos

contaminated products held on July 31, 2001.

My name is Mary Gazaille. My husband, Donald, and I live at 13124 Louisa Road, Louisa, Virginia, across from the vermiculite mining site. We have researched the matter and have studied documentation regarding the asbestos contamination of Virginia Vermiculite and are concerned about this exposure to air-borne asbestos and wanted reassurance that our family was in no danger.

Some time last year, EPA employees came to test our property for asbestos contamination. We were later told that their results indicated that there was none present although very little detail was given to us. We were not satisfied with this inspection because it was clear that their testing of our property was inadequate.

Despite my protests to these inspectors that our home had just been remodeled on the interior and that the windows were kept sealed at all times because of the heat/air conditioning system, they took most of their samples from inside our house. This included from the top of a brand new refrigerator, a freshly painted bedroom and so on. We explained to them that the likely place where they would find asbestos dust blowing from across the street would be on the exterior of our property, including the driveway, out-buildings and such. For reasons that we cannot understand, they refused to take any samples from the areas where they would have obtained meaningful results. We also asked them to set up an air monitoring device in our field across from the mine to capture the dust that was spreading from the mining operation to our property, and from the trucks on the road to our property. Again they refused. I have spoken with some of my neighbors and find that they experienced the same disinterest in doing any meaningful investigation on these properties. We have since read accounts in the press promoted by Virginia vermiculite that the area around the mine and the adjacent property owners are ``safe''. This is extremely misleading and I feel that it is important for you to know the truth about what happened.

In addition, although we asked EPA for a detailed report on their studies of the area, none has been forthcoming.

It was the impression of my husband and myself that they were more interested in not finding any asbestos dust than in actually finding it and protecting the public health.

Thank you very much for including this in the record.

Very truly yours,

Mary Gazaille.

Response to Questions of Senators Kennedy and Murray From David D.
Lauriski

1. In your testimony, you said MSHA has taken samples at all existing vermiculite, taconite, talc and other mines to determine if asbestos is present and at what levels, which has meant almost 900 samples at more than 40 operations. Did you find asbestos concentrations above MSHA's standard at any of these operations? If so, which ones and what are you doing to protect miners? What type of technology did you use to measure the samples? Was it the most powerful technology, TEM? Did you find concentrations of asbestos below MSHA's standard but above OSHA's stricter standard of 0.1 fiber per cubic centimeter? If so, what are you doing at these mines to protect workers in the interim, or will miners have to wait until MSHA lowers its standard to be protected at the level OSHA deems appropriate?

Response. To date, MSHA has not found actual asbestos concentrations above either the MSHA permissible exposure limit (PEL)

or the OSHA PEL at the more than 40 operations where almost 900 environmental samples were taken. I would note that MSHA is continuing to conduct sampling at mines known to have a potential for asbestos contamination.

MSHA is using three methods to analyze its collected samples. The environmental samples are analyzed using the procedures of the National Institute for Occupational Safety and Health (NIOSH) Analytical Method 7400A using Phase Contrast Microscopy (PCM). When air sample fiber results indicate a reading over the OSHA PEL, the filter membrane is re-analyzed to determine if the fibers are asbestos using the NIOSH Transmission Electron Microscopy (TEM) method 7402. To date, approximately 17 percent of the recent PCM fiber results have required further TEM analysis. However, as stated earlier, none of the TEM results have indicated an asbestos fiber result over the OSHA PEL.

In addition to airborne fiber sampling, MSHA analyzed bulk ore samples using the U.S. Environmental Protection Agency (EPA) Polarized Light Microscopy (PLM) method ID 600/R-93/116. The bulk ore samples were visually inspected for fibrous material that potentially could be asbestiform mineral. At several mines, the analysis of the bulk samples indicated the presence of asbestos; however, concurrent air sampling did not indicate overexposures.

Whenever bulk sampling and/or analysis reveals the presence of asbestos, MSHA informs mine management and workers of its presence and the importance of compliance with MSHA standards (30 CFR 56/57.5001) designed to protect the miners from exposure to asbestos. Many operators already avoid or specifically remove any visible asbestos streaks or veins that they encounter while mining, MSHA reemphasizes the importance of this practice.

2. Why didn't MSHA lower its standard for exposure to asbestos when OSHA lowered it in 1986 and 1994?

Response. I was confirmed as Assistant Secretary in May 2001. I cannot speak to the decisions made by my predecessors. However, I can assure you that we are committed to ensuring that miners' health is appropriately protected and are considering this matter with the highest level of attention.

3. You indicate in your response to the I.G.'s [Inspector General's] report that you will be presented with options on a process to solicit input from affected stakeholders. Have you received those recommendations? Do you know how you are going to proceed? Do you have a time frame for achieving a resolution based upon these recommendations?

Response. Yes, I have received these options. I will be meeting with other DOL personnel to determine the best course of action. I want to assure you that we will act as expeditiously as possible. In the interim, MSHA will continue to conduct sampling at mines known to have potential for asbestos, and will continue to analyze the sample to evaluate miner's exposure against both the MSHA and OSHA PELs.

4. In 1989, MSHA issued a proposed rule to lower its standard from 2 fibers per cubic centimeter to 0.2 fibers per cubic centimeter. Why wasn't this rule ever finalized?

Response. I cannot comment on the decisions made by my predecessors. However, we are dedicated to the goal of miners' safety and health.

5. Also in 1989, MSHA proposed rules to address take home contamination and exposure to asbestos. Why wasn't this rule ever promulgated?

Response. Again, it would be inappropriate for me to speculate about decisions made by my predecessors. I can, however, express our strong interest in addressing this issue prospectively.

6. You state in your testimony that the ``Libby experience is, of

course troubling.'' How do you explain what happened there? How can you ensure this Committee that what happened in Libby won't happen again, or that it isn't currently happening right now in one of the many mining communities in this country? When you read the accounts of what happened in Libby, what was your reaction?

Response. I was deeply troubled by the Libby story. My first concern is to make sure that mines today are protected from similar situations. We also want to do what we can to help the affected individuals and their families. MSHA has, along with other Agencies, met with members of the Libby community to understand and respond to their concerns. I, along with the Assistant Secretary for OSHA, have travelled to Libby to meet with community members personally.

MSHA has already taken a number of steps to protect the health of today's miners who may be exposed to asbestos. We are sampling at all mines, and are having the samples analyzed for comparison with both the MSHA and OSHA PEL. Although MSHA does not have the authority to take enforcement actions based on the OSHA PEL, we are advising both mine operators and miners of the OSHA PEL, and recommending that they should strive to achieve that level. In addition, we are working with other involved Agencies to prevent any future occurrences.

7. With respect to the permissible exposure limits (PEL) for asbestos, it is our understanding that MSHA's PEL is 2.0 fibers per cubic centimeter, while OSHA's PEL is 0.1 fiber per cubic centimeter. We also understand that, according to the recent I.G.'s report, between 1978 and 1998 MSHA took more than 160 samples at the Libby, Montana vermiculite mine, only two of which exceeded a threshold of 2.5 fibers per cubic centimeter. Yet we believe that nearly 200 people in Libby, Montana have died from asbestos-related disease. Does this not suggest to you the current MSHA PEL for asbestos fails to protect miners, their families, and other member of the community from asbestos-related disease? Will MSHA be proposing a rule to lower the asbestos PEL?

Response. Asbestos related lung disease can take decades to develop. Before MSHA's 2.0 fiber standard took effect in 1978, miners in Libby were exposed to much higher concentrations of asbestos, as indicated by sampling records--over 100 fibers per cubic inch in some instances. Some miners almost certainly received additional exposures outside the mine as did others in the community. All of these exposures undoubtedly have contributed to the high incidence of lung disease. The 2.0 fiber standard is more protective than what came before. However, the scientific community and MSHA recognize that individuals exposed to 2 f/cc are at greater risk of developing asbestos related disease than those exposed to lower levels. MSHA data indicate that current mining exposures are far below the regulation level of 2 f/cc. As we study the factors involved in the Libby experience, MSHA will integrate the findings into any future rulemaking activities. In the interim, however, we will continue to analyze samples, evaluating against both the MSHA and OSHA PELs.

8. We also have serious concerns about the issue of advance notice of inspections to mine operators. Such advance notice is prohibited under Section 103(a) of the Mine Act. And it seems evident that such advance notice--or even miners' perception that operators are being given advance notice--threatens to undermine MSHA's integrity. We assume you agree that this is a serious problem. You indicated that you will do an annual reminder to enforcement personnel about this prohibition. How will you follow up to know whether inspectors are adhering to this requirement? Do you have any benchmarks that you will be using to determine whether your directive--and the law--are being obeyed? Do you intend to send this annual reminder for coal as well as metal/nonmetal mine personnel?

Response. First, I must state for the record that the Agency has

not found evidence that inspectors are giving advance notice. We take such allegations seriously and promptly conduct an investigation. Even the perception some miners may have regarding this issue impacts our overall effectiveness.

We are committed to upholding the Mine Act. MSHA will issue an annual reminder to both coal and metal and nonmetal enforcement personnel to renew and ensure our commitment to the requirements of the Mine Act. Our supervisors and managers oversee the activities of our inspectors, which includes accompanying them on their inspections, and monitoring comments from industry and labor. With improved communication between MSHA and its stakeholders, violations of this kind would be quickly detected.

9. As you reflect on the situation in Libby, Montana, or the situation in the Virginia Vermiculite mine that Mr. David Pinter has testified about, if you were the mine operator, and the core drilling showed the presence of tremolite asbestos on the property, what actions would you take to protect the miners who work there?

Response. We believe that it is critical for mine operators to ensure that the miners at their operations are aware of the hazards of asbestos, their location at the mine, and the measures to take to avoid exposure. Some of the most effective methods to control airborne asbestos include the use of water to suppress dust and the use of air conditioned equipment cabs, and enclosures to separate miners from dusty environments. MSHA currently requires protective equipment/clothing to be provided to miners where hazards, such as asbestos, are present, and visible delineation (posting) of areas that contain asbestos.

MSHA developed an asbestos information card, which our inspectors provide to miners and mine operators. In addition, we have directed our inspectors to encourage operators to lower exposures consistent with the OSHA PEL.

10. Does MSHA have regulations or requirements for mine operators to follow if core drilling identifies the presence of asbestiform minerals?

Response. In addition to our concentration limit for asbestos, MSHA has performance-oriented regulations which are triggered by the presence of a hazard in the workplace, regardless of whether or not a specified limit is exceeded. Title 30 CFR 56/57.15006 requires the mine operator to provide protective equipment and clothing when certain hazards are present. Title 30 CFR 56/57.20011 requires operators to barricade or post warning signs with appropriate information at all approaches to areas where health or safety hazards exist that are not immediately obvious to employees.

11. Does MSHA have access to core drilling records (kept by mine operators) to ensure that miners are informed about asbestos hazards in the ore? if not, should MSHA be given this access? If you do not agree that MSHA should be given this access, please explain.

Response. MSHA does not have access to the mine operator's core drilling results. However, when the presence of asbestos at the mine is suspected, MSHA inspectors take bulk samples of the material which are sent to a laboratory for analysis. These samples are analyzed and concurrent air sampling is conducted. This process is explained more fully in the response to question 1.

12. How many miners in the U.S. are potentially exposed to asbestiform minerals through the mining process?

Response. As of June 2001 there were more than 8,000 miners working at mines that produce asbestos, taconite (iron ore), talc and vermiculite. These operations have the highest potential for the occurrence of asbestiform minerals. However, since the spring of 2000 we have not found any actual overexposures, according to either the

MSHA or the OSHA PEL.

13. In the last two years, how many mining operations has MSHA sampled for asbestos exposure?

Response. In the last two years, MSHA has conducted 205 inspections at 170 mining facilities during which samples for asbestos analysis were collected. These include MSHA's regular sampling activities as well as those conducted during the special emphasis program initiated in the spring of 2000. This is several times more than was done in the two years preceding our awareness of the situation in Libby.

14. If a mine is found to have an overexposure to asbestos under MSHA's current standard, what is the monetary penalty against the mine?

Response. The Federal Mine Safety and Health Act of 1977 (Mine Act) contains six criteria to be used in determining civil penalty amounts. These criteria include:

- <bullet> The operator's history of previous violations;
- <bullet> The appropriateness of the penalty to the size of the business;
- <bullet> Whether the operator was negligent;
- <bullet> The effect on the operator's ability to continue in business; and
- <bullet> The gravity of the violation and the operator's demonstrated good faith in attempting to achieve rapid compliance after notification of a violation.

These criteria are used in developing penalty amounts based on the regular assessments process described in Title 30 CFR Part 100. Those regulations also outline MSHA's single penalty assessment criteria and the special assessment criteria and procedures. The Mine Act's criteria and MSHA's implementing regulations are designed to arrive at a proposed civil penalty that serves as a deterrent, but also is specific to the operation.

15. Where does MSHA send its samples for asbestos analysis? How much does it cost and how long does it take to get results back?

Response. MSHA in past years has contracted with several different laboratories for asbestos analysis. MSHA currently sends its asbestos samples to Reservoir Environmental Services, Inc. 2059 Bryant Street, Denver, CO 80211. The cost for a bulk sample is \$12 each for Polarized Light Microscopy analysis and \$50 each for TEM analysis. The cost of Phase Contrast Microscopy (PCM) for air samples is currently \$10 and their TEM analysis is \$60. MSHA has been working with the current contractor to determine if the turn around time can be improved. If this is not possible, MSHA will use other laboratories.

16. EPA staff working on the Libby situation have gained tremendous expertise over the last 2 years. How will MSHA coordinate with EPA staff to utilize their expertise about asbestiform minerals at the mining operations?

Response. MSHA has worked closely with EPA on this important issue. Last year EPA and MSHA staff met with members of the Libby community to address their concerns. Later we sponsored an Asbestos Health Effects Conference in May 2001 along with EPA, NIOSH and the Agency for Toxic Substances and Disease Registry, to discuss the current status and needs for research on this topic. MSHA staff met with other agencies following the May meeting. In all sessions, there is a free and open exchange of information. In addition, there is a standing committee of OSHA, NIOSH, EPA, and MSHA (the OMNE Committee) which meets at least quarterly to discuss areas of common interest. Asbestos is often a discussion topic at these meetings. MSHA will continue this cooperative interchange with EPA and other agencies.

Health Service,

Washington, DC, October 17, 2001.

Hon. Edward M. Kennedy,
Chairman, Committee on Health, Education, Labor and Pensions, U.S.
Senate, Washington, DC.

Hon. Patty Murray,
Committee on Health, Education, Labor and Pensions, U.S. Senate,
Washington, DC.

Dear Senators Kennedy and Murray. Thank you for providing the National Institute for Occupational Safety and Health (NIOSH) the opportunity to testify on matters of workplace safety and asbestos contamination at the hearing of the Senate Committee on Health, Education, Labor and Pensions on July 31, 2001. We are pleased to respond to the follow-up questions posed in your letter of August 8, 2001, as listed below. I understand that the questions you included from Senator Paul Wellstone are being addressed separately by the Department of Health and Human Services and the Agency for Toxic Substances and Disease Registry.

1. In your testimony, you said that in 1991, NIOSH estimated that nearly 700, 000 workers in general industry remained potentially exposed to asbestos, not including mining, railroad work, agriculture and several other industry sectors. Does this estimate include mechanics?

Response. This estimate includes mechanics who worked in general industry, but not those who worked in mining and agriculture. The general industry category does include the retail trade and service sectors, so the estimate would include auto mechanics working at dealerships and repair shops. Our estimate is based on data NIOSH developed as part of our National Occupational Exposure Survey (NOES) conducted early in the 1980s. The NOES assessed patterns of use and exposure for general industry but excluded large segments of some significant sectors, such as mining and agriculture. To derive the 1990 estimate of 700,000 workers potentially exposed to asbestos, we used the 1980s asbestos use patterns from NOES and multiplied that fraction by the 1990s employment statistics for the covered industrial sectors. Thus, mechanics in the industrial sectors not included in the NOES were not included in our estimate. A new patterns-of-use survey similar to the NOES would be needed to develop a more accurate current assessment of the number of mechanics and other workers potentially exposed to asbestos.

2. NIOSH also stated that the average number of samples taken by federal occupational safety and health inspectors declined by about 50 percent between 1987 and 1996. Why did the number of inspections go down?

Response. The number of samples recorded and reported in centralized databases to which we have access declined over the period 1987 to 1996. This does not necessarily mean that the number of inspections declined. As noted in our testimony, not all samples collected by OSHA are reported into the centralized databases. The decline we reported is based on the number of samples collected and reported by OSHA inspectors, and does not necessarily equate to the number of inspections that were carried out.

3. In your testimony, you said much of the vermiculite from Libby appears to have been contaminated with asbestiform minerals which are not currently regulated. Doesn't this suggest that perhaps the federal government should expand its definition of asbestos to include these other minerals?

Response. The dust particles to which workers were exposed at the mine in Libby, Montana, included both fibrous minerals that meet the

current regulatory definition of asbestos and others that do not. In our study. From the 1980s we observed significant excesses of asbestos-related diseases in this exposed workforce. Because the exposure was to a complex mixture of fibers, including some that meet the regulatory definition of asbestos, it is not possible to attribute the cause of disease to any one particular fiber type. In such mixed fiber exposure settings, public health prudence suggests that workers may be best protected if exposures to all of these fiber types were reduced. Further discussion regarding the definition of asbestos is included in our response to Question 5, below.

4. NIOSH is currently conducting asbestos exposure assessments at vermiculite expansion plants and a number of horticultural sites. Does NIOSH have any test results back from this field sampling? If so, what are the findings? If not, when does NIOSH expect to have these results?

Response. At present, there are no test results to report from our investigations at expansion plants and horticultural sites. The field sampling efforts are continuing and are expected to be completed by the end of calendar year 2001. NIOSH will prepare and disseminate reports of findings after laboratory results are completed and analyzed.

5. In your testimony, you indicated NIOSH considers ``cleavage fragments'' within its definition of ``asbestos.'' Shouldn't, MSHA, OSHA and EPA do the same?

Response. NIOSH has presented testimony to the Department of Labor (OSHA) that recommends including in fiber counts the cleavage fragments from the nonasbestos form (massive) habits of the six regulated asbestos minerals and other minerals in the same solid-solution series when they meet the shape and size criteria for being a fiber. NIOSH has provided the EPA with similar recommendations.

6. Is NIOSH currently conducting any epidemiological studies of people exposed to naturally occurring or manufactured fibers? Does NIOSH have plans to conduct these studies, and if so, when will they begin and when will results be available?

Response. NIOSH is conducting updates and re-analyses of the mortality experience of workers from the former Libby, Montana, facility and of workers at a textile plant that used chrysotile asbestos to produce textiles in South Carolina. In addition to adding more years of follow-up to these studies, NIOSH is attempting to improve its estimates of fiber exposures at these facilities using electron microscopy. The primary objective of these analyses is to seek a better understanding of how fiber characteristics (e.g., dimension and fiber type) influence the risk of respiratory cancer and non-malignant respiratory diseases. Another objective is to determine the impact of short-duration exposures among workers who were only transiently exposed at the plants. Both of these studies were recently initiated, and results are not expected for at least two years.

7. Does NIOSH currently have any plans to conduct research to better determine physical and or chemical characteristics affecting toxicity of asbestiform minerals?

Response. The epidemiologic studies described above should provide a better understanding of fiber characteristics, that affect toxicity. Also, NIOSH has been conducting animal exposure studies to evaluate short-term response to length-classified fibers. Most of this work is completed, and publication of findings is anticipated in the near future.

8. Is NIOSH currently considering additional work to improve and standardize the methods for asbestos fiber measurement? If so, what is the status of this work and when will it be completed?

Response. There is no current research activity underway at NIOSH for changing the methods for asbestos fiber measurement. Some promising work currently is going on in Japan to develop an image analysis

system. NIOSH is preparing to re-analyze samples from the South Carolina textile cohorts using transmission electron microscopy (TEM) to better define the exposures at these locations using more sensitive methods than the optical microscopy techniques used when the original epidemiology studies were done. This information will help determine which fiber indices predict disease in workers.

9. To follow-up on the last sentence of your testimony, do you think MSIHA's and/or OSHA's exposure limits need to be lowered? Does the federal government's definition of asbestos need to be expanded to ensure better protection for workers and consumers? Should asbestos be banned altogether?

Response. In prior testimony to the DOL, NIOSH urged that the goal be to eliminate exposures to asbestos fibers or, where they cannot be eliminated, to limit them to the lowest possible concentration. With regard to exposure limits, the NIOSH Recommended Exposure Limit (REL) is 0.1 f/cm³, a limit based on the lowest level that can currently be detected in air. We have in the past recommended a single exposure limit of 0.1 f/cm³ applicable to all workers.

More than a decade ago, NIOSH broadened its definition of asbestos and recommended that DOL revise the asbestos regulations to do the same. The NIOSH definition includes additional mineral fibers beyond the six traditionally specified as asbestos. In assessing asbestos exposures, NIOSH also recommends counting cleavage fragments that meet dimensional criteria as fibers.

In response to your question regarding a ban, occupational safety and health practice is based on a hierarchy of controls, and substitution is at the top of the hierarchy. It is an important option for prevention. NIOSH recommendations often address substitution where feasible, and NIOSH has in the past recommended this approach for asbestos. Since the OSH Act authorizes OSHA to establish feasible exposure levels, but does not specifically authorize an outright ban of any particular substance from the workplace, NIOSH has focused its asbestos recommendations to DOL on control of hazards to workers.

The greatest current risk of asbestos related disease for U.S. workers is likely to come from exposure to respirable fibers in uncontrolled maintenance, repair, or demolition of structures or products where asbestos is already in place. Similarly, exposure to naturally-occurring forms of asbestos materials will continue to pose a problem in mining and other mineral-extraction or tunneling activities. This risk will remain whether or not there is a ban on future use.

While additional information about asbestos exposure is being gathered, we believe reducing or eliminating known asbestos exposures is the best way to protect worker and public health.

Once again, I appreciate the opportunity to address your questions concerning this important public health matter. NIOSH remains committed to protecting the life and health of every U.S. worker. Should you have further questions, please do not hesitate to contact me.

Sincerely yours,

R. DeLon Hull, Ph.D.
Acting Deputy Director for Program

the facts about scotts, w.r. grace, and vermiculite

<bullet> Scotts consistently provided a safe workplace that met or exceeded OSHA and EPA standards. The company strictly complied with all government regulations and relied on OSHA standards to determine workplace safety.

<bullet> For many years, W.R. Grace apparently knew that the vermiculite it was supplying to Scotts from its Libby, Montana mine was contaminated with asbestos and intentionally failed to inform its

customers, including Scotts, until the advent of OSHA regulations in the early 1970's. (See 7/9/01 New York Times article about efforts of W.R. Grace to hide asbestos contamination.)

<bullet> Once it became clear to Scotts that there were potential health problems associated with the vermiculite supplied by W.R. Grace, it acted prudently and responsibly to protect its workers.

Early 1970's--The Company immediately and voluntarily began a comprehensive air-monitoring program and significantly upgraded the dust collection systems at its Marysville facility to ensure worker safety.

Mid 1970's--Scotts voluntarily implemented an annual physical program that included chest x-rays, and pulmonary function tests for associates at the Marysville facility.

Mid 1970's--Scotts initiated a series of well-documented worker communications to keep associates informed of issues related to asbestos-contaminated vermiculite. The Company maintained frequent communication with its associates on the subject over the next decade.

1978--Despite the fact that dozens of companies were using vermiculite, Scotts was the first and only company to contact the EPA and OSHA when three associates' lung problems worsened and another became sick. It did so on a completely voluntary basis. Scotts informed the regulators that there may be a possible connection between its sick workers and asbestos-contaminated vermiculite--despite no scientific connection at that point.

1980--Scotts voluntarily stopped accepting ore from the Libby mine, even though it was still on the market, met EPA standards, and was used by W.R. Grace in its own products. (The New York Times 7/9/01 article on Grace's efforts to hide asbestos contamination says, in reference to Scotts: ``[In 1980] The company insisted on switching to vermiculite that Grace mined in South Carolina, which was apparently uncontaminated.'' Grace did not close the Libby mine until ten years later, in 1990.

1980--Scotts required its new vermiculite vendors to certify that ore shipped to its facilities was free from contamination. Grace continued to sell the Libby ore and utilize ore in its own products for another decade.

<bullet> Scotts has been widely acknowledged by the EPA and OSHA and applauded in private reports as the catalyst for alerting the government to the problems with vermiculite which led to numerous investigations into the ore in the late 1970's and the 1980's. These investigations culminated in 1980 EPA draft regulations. While these regulations were never implemented, Scotts was commended by the EPA in 1980 for its actions.

<bullet> There is an important distinction between workplace hazards and product hazards. Scotts has regularly tested its products for safety. All Scotts products have been and continue to be asbestos-free and safe for customers. According to the EPA, Scotts' and other gardening companies' products ``do not pose significant health risks.'' All Scotts products are safe for sale and use in the marketplace.

<bullet> Scotts stopped using contaminated ore from the Libby mine in 1980. Vermiculite was purchased after 1980 from other sources and was certified by suppliers as asbestos-free. Scotts also regularly tested for asbestos. During the 1980's and 1990's, Scotts began to reduce its reliance on asbestos-free vermiculite as better alternatives became available that were more environmentally friendly. By 1998, Scotts had eliminated 75% of its asbestos-free vermiculite usage. Today, asbestosfree vermiculite is used by Scotts only in a few professional gardening products.

Response to Questions of Senator Kennedy From John L. Henshaw

1. Has OSHA considered lowering its standard below the current level of .1 fibers per cubic centimeter?

In 1994, OSHA lowered the Agency's standard for asbestos to the lowest feasible level, 0.1 fibers per cubic centimeter as an 8-hour time-weighted average over the working day. The Agency also added a short-term excursion limit of 1 fiber per cubic centimeter averaged over a 30-minute period, and added several ancillary provisions that the Agency found would lower employee exposures even further. However, the extent to which these ancillary provisions would lower exposures below the Permissible Exposure Limits (PELs) could not be quantitatively measured. Thus, OSHA's PELs for asbestos are constrained by feasibility, which means that the regulated community is not technologically and economically able to meet a lower PEL. Even so, OSHA's PELs for all forms of asbestos remain the lowest in the world.

2. What technology does OSHA rely on to measure asbestos fibers? Is it Transmission Electron Microscopy?

No, OSHA does not rely on Transmission Electron Microscopy (TEM). OSHA uses Phase Contrast Microscopy (PCM) (because it is inexpensive and it measures the asbestos concentration in the same way that was used in the development of a risk assessment model for asbestos Permissible Exposure Limit (PEL). OSHA used scientific data of health effects, including death and disease, that was based entirely on light microscopy, largely Phase Contrast Microscopy (PCM). It was the only reliable data available at the time and remains so because adequate studies relating health effects to exposures measured by TEM have not been done. However, the Agency may use TEM to identify fibers if there is a question whether or not the fibers are asbestos.

3. How does OSHA ensure compliance with existing regulations at the thousands of auto body shops throughout the country where mechanics are working on brakes that may contain asbestos?

OSHA ensures compliance by enforcing the General Industry Standard (29 CFR 1010.100 1) Construction Industry Standard (29 CFR 1926.1101) and Shipyards Standard (29 CFR 1915.1001) through its inspection program. These standards require employers to ensure that employee exposures do not exceed 0.1 fibers/cubic centimeter of air (f/cc) as an eight-hour, time-weighted average (TWA). In addition, OSHA has set mandatory Work Practices and Engineering Controls for Automotive Brake and Clutch Inspection, Disassembly, Repair and Assembly. These requirements apply when any brake work is done, regardless of the exposure levels. OSHA estimated that compliance with these mandatory work practices and engineering controls will result in the average asbestos exposure to be 0.003 fibers/cc.

Inspections are conducted in response to complaints from employees, or as a result of referrals from other sources such as, but not limited to, law enforcement and the news media. OSHA also targets establishments for inspection through its site specific targeting program, National Emphasis Programs, and Local Emphasis Programs. While these targeting programs do not focus specifically on asbestos, any potential asbestos exposure in a workplace is investigated and evaluated as part of these inspections

4. OSHA currently only regulates six forms of asbestos. Does OSHA believe current science warrants expanding or changing its authority to cover minerals which may also pose health threats but do not meet the strict definition of asbestos?

Under the OSH Act, OSHA has the authority to regulate occupational exposure to hazardous substances that pose a significant risk of material impairment of health if there are technologically and economically feasible ways for employers to provide protection from these risks. In 1992 (57 FR 24310), OSHA made a determination that the

scientific evidence did not support the regulation of non-asbestiform minerals of the type referred to in your question. OSHA does not believe that the science available at this time warrants initiation of Sec. 6(b)(5) rule making to address these substances. However, the Agency continues to closely monitor new scientific findings on these substances closely while also actively participating in research and review of the evidence conducted by Federal, national and international scientific organizations (such as the National Institute for Occupational Safety and Health, the National Toxicology Program and the International Agency for Research on Cancer).

5. How does OSHA, as the primary organization responsible for protecting worker safety, explain what happened in Libby, Montana?

The Occupational Safety and Health Act of 1970 provides the Secretary with authority over all working conditions of employees except those conditions with respect to which other Federal agencies exercise statutory authority to prescribe or enforce regulations affecting occupational safety and health. The Secretary has delegated this authority to OSHA.

The Federal Mine Safety and Health Act of 1977 provides the Secretary of Labor with authority over all working conditions of employees engaged in underground and surface mining as well as related operations such as milling. The Secretary has delegated this authority to the Mine Safety and Health Administration (MSHA). A Memorandum of Understanding between MSHA and OSHA, concluded in 1979, details the respective jurisdictions of the two agencies. The general principle is that on mine sites and milling operations, DOL will apply provisions of the Federal Mine Safety and Health Act. Whenever the mining law does not cover hazards at mill or mine sites (e.g. hospitals on mining sites), or where there are no existing MSHA standards, the OSH Act will apply. Thus, OSHA is generally precluded from enforcing its regulations in workplaces such as the mine at Libby, Montana.

6. In Mr. Layne's testimony, he stated that since October 1995, OSHA cited employers for violations of its asbestos standards 15,691 times. What percentage is this of the total number of inspections? Does OSHA consider this to be an acceptable level of noncompliance?

From Fiscal Year 1996 through Fiscal Year 2001 (Oct. 2000-June 2001), OSHA conducted 190,971 total inspections. These inspections generated 427,786 total violations. Of those totals, 3000 inspections and 15,691 violations involved asbestos. Therefore, approximately 2% of inspections and 4% of violations were asbestos related.

OSHA does not consider any level to be an acceptable noncompliance level. We strive for 100% compliance.

Office of the Governor,
State of Montana,
Helena, MT, July 2, 2001.

Christine Todd Whitman,

Administrator, Environmental Protection Agency, Washington, DC.

Dear Administrator Whitman: I understand that the Environmental Protection Agency is considering placing the town of Libby, Montana on the Superfund National Priorities List (NPL). I am writing to ask for your assistance in providing me with additional information that is needed to evaluate the best course of action for the town.

First, before we even discuss designation of Libby as an NPL site, it is essential that I understand the scientific basis for such a decision. I would like a briefing on the current federal rules that govern environmental measurement of and exposure to asbestos and its remediation so that the Libby situation can be assessed in the context of currently established federal practices. I need to be assured that

those rules have been applied to Libby as they apply in other such situations across the country. In order to provide this information in a timely way, I would request that a senior staff member from EPA headquarters who has not been involved directly in the Libby matter brief me on these issues. I want to make sure I have an objective understanding of the Libby situation so that I can fairly advise and respond to the people in the community. It would be most useful if this briefing could take place as soon as possible.

As a part of any briefing on the listing of Libby as a superfund site due to the asbestos problems, I would also like to be briefed on state obligations associated with such listing. I am concerned about the potential for Montana having to meet a 10 percent match requirement for expenses not recoverable from WR Grace. I also want to fully understand what Montana's long-term operations and maintenance obligations might be, should cost recovery from WR Grace not be possible.

Second, after this review has been completed, and if indeed the available information confirms EPA's current assessment, I would request that you provide me with information about the implications of designating the town of Libby a Superfund NPL site. I understand that in the past the Environmental Protection Agency has designated communities, either municipalities or large residential areas, as priorities for Superfund cleanup, including such locations as Globe, Arizona and Times Beach, Missouri. In order that I might make a considered judgment and advise my constituents as to the best option to proceed with programs to protect their health and welfare, it would be useful to have an evaluation of past situations in which entire towns or large residential and/or commercial communities, or at least large segments of such areas, have been placed on the National Priorities List, I would like to understand better how the NPL designation may affect the value of real estate, including residential and commercial establishments, within the Superfund site area, and the ability to transfer or mortgage such properties. If the effects of listing an area on the NPL result in negative impacts like difficulty setting properties within the NPL area, reduction in fair market value of such properties and extra costs to protect buyers from potential Superfund liability. How long have such negative impacts lasted? Do communities so designated recover from these burdens associated with placement on the National Priorities List and, if so, how long does recovery take?

Additionally, to the extent that property values are adversely affected by placement on the NPL, to what degree are homeowners and business people able to recover a reasonable fair market value for their properties if they choose to or are required to sell that property during the period in which cleanup is taking place? To what extent has the ability of home and business owners to refinance or take loans on their property been affected. If EPA puts a municipality or large commercial/residential area on the National Priorities List, is it authorized to purchase the homes and commercial establishments which are adversely affected thereby? At what price--pre-listing fair market value? And, if so, what is the history of the effect of that acquisition on the fair market value of those properties? Finally, in your view, if such actions are possible, are there sufficient resources in the Superfund program to acquire the homes and businesses in Libby, Montana?

It is essential that I have as complete an understanding as possible of the federal rules regarding asbestos exposure and cleanup as well as the implications of placing a municipality or a large residential/commercial area on the National Priorities List in order to consult with your Agency in the decision-making process with respect to Libby. I would therefore greatly appreciate your responses to this

inquiry as soon as possible so that I may factor them into my evaluation of the best course of action for the residents of Libby.

Sincerely,

Judy Martz,
Governor.

U.S. Senate,
Washington, DC, March 27, 2001.

Hon. James M. Jeffords,
Chairman, Committee on Health, Education, Labor, and Pensions, U.S.
Senate, Washington, DC.

Hon. Edward M. Kennedy,
Ranking Member, Committee on Health, Education, Labor, and Pensions,
U.S. Senate, Washington, DC.

Dear Senators Jeffords and Kennedy: In February and March of this year, the Wall Street Journal ran two articles containing the incorrect, but widely held belief, that asbestos has been banned. However, as you may know, asbestos has not been banned. Asbestos is still used in the United States to manufacture roofing materials, automotive brakes, gaskets and other consumer products. According to the U.S. Geological Survey, in 1999 alone, the United States consumed 15,000 metric tons of asbestos, mostly chrysotile from Canada. The fact that the Wall Street Journal would make this mistake twice in two months indicates the extent of this misperception about asbestos.

Some of the confusion about asbestos may stem from the fact that in 1989, the Environmental Protection Agency (EPA) promulgated regulations to implement a phased-in ban on asbestos in consumer products. The agency had been working on these rules for a decade, and the ban received a lot of attention. In 1991, the 5th Circuit Court of Appeals overturned EPA's regulations, and the Bush Administration did not appeal the decision. Unfortunately, most people are unaware of the Court of Appeals' decision and the resultant reversal of EPA's ban.

There is considerable evidence suggesting many other consumer products contain asbestos as a contaminant of vermiculite, talc and taconite. Most infamous, perhaps, is Libby, Montana, where 192 people have died from exposure to asbestos from the vermiculite mine there, and 375 people are currently suffering from fatal diseases caused by this exposure. Last year, Senator Max Baucus (D-MT) held a hearing on Libby, Montana before the Senate Environment and Public Works Committee.

This week, the Inspectors General of the EPA and Department of Labor are releasing their reports about why people in Libby were exposed to harmful concentrations of asbestos in vermiculite, despite many federal programs and requirements intended to protect miners, their families and residents. These reports also include specific recommendations, such as lowering the Mine Safety and Health Administration's (MSHA's) asbestos exposure limit for miners to meet the Occupational Safety and Health Administration's (OSHA's) standard, which is 20 times more stringent. I look forward to reviewing these reports as soon as they become available.

The EPA is also investigating consumer products that contain vermiculite from Libby, such as Zonolite insulation and some lawn and garden products. The agency is concerned about workers exposed to asbestos-tainted vermiculite during manufacturing, as well as consumer exposure to these products.

Recent test results indicate automobile mechanics are routinely exposed to unsafe concentrations of asbestos when they work on brakes. Last November, the Seattle Post-Intelligencer found asbestos concentrations ranging between 17 and 62 percent of dust collected from

six out of seven gas stations visited in the Seattle. The newspaper found similar results in Boston and other major cities. The EPA and OSHA recommend specific work practices and engineering controls to protect mechanics from asbestos in brakes, but the Seattle P.I.'s investigation found these practices are rarely followed.

We know exposure to asbestos causes asbestosis, mesothelioma and cancer. Disease caused by exposure to asbestos usually does not appear until decades later. I am very concerned American workers and consumers, most of whom believe asbestos was banned back in the 1980s, are still being unwittingly exposed to this deadly substance.

I am writing to request that the Senate Committee on Health, Education, Labor and Pensions hold hearings on asbestos during the first session of the 107th Congress as part of our oversight responsibility on work place safety. I would like an update from federal agencies (EPA, OSHA, MSHA, and the National Institute for Occupational Safety and Health) on current efforts to protect workers and consumers from exposure to asbestos. I would also like to explore which materials are regulated and the health effects of non-regulated minerals similar to the six characterized as asbestos.

I understand this is not a new issue. Decades after the dangers of asbestos were first identified, there are thousands of pages of federal and state regulations intended to protect people from amosite, chrysotile, crocidolite, tremolite, anthophyllite and actinolite. And we have made some progress because of these rules, regulations and programs. But these efforts failed the people of Libby, Montana, and it appears they are still failing some workers and consumers in the United States.

We need to make sure governments have the resources necessary to implement regulations currently on the books. We need to further explore protecting people from exposure to airborne minerals which are not technically categorized as ``asbestos,'' but which look, function, and may be just as harmful as asbestos. We should also review our methodologies for defining, detecting and measuring asbestos to ensure consistency across agencies. Finally, I believe we need to revisit the question of banning asbestos in consumer products altogether.

Thank you very much for your attention to this matter. Please feel free to contact me directly about this, or to have the appropriate staff person contact Ms. Anna Knudson, Legislative Assistant, by calling 202-224-2621. Thank you again.

Sincerely,

Patty Murray,
U.S. Senator.

Building and Construction Trades Department,
American Federation of Labor--Congress of
Industrial Organizations,

Washington, DC, July 31, 2000.

Hon. Edward M. Kennedy,
Committee on Health, Education, Labor and Pensions, U.S. Senate, Senate
Dirksen Office Building, Washington, DC.

Dear Chairman Kennedy: On behalf of the more than 3 million workers represented by the national and international unions affiliated with the Building and Construction Trades Department, AFL-CIO, I am writing to you about the exposure of construction workers to asbestos and asbestos-contaminated construction materials. About 10,000 workers are expected to die in the United States each year for the next 10 years from asbestosis and cancers caused by past exposure to asbestos. Over 25% of these deaths will be in construction.

These past exposures were mostly due to the installation of asbestos-containing fireproofing, roofing and flooring materials, insulation (in pipes, ducts, boilers, attics), and cement pipe and cement sheet products. However, construction workers are still being exposed to asbestos today. The major problem is not due to installation of asbestos-containing products, but exposure to asbestos resulting from disturbing or removing asbestos that is already present in buildings. This is especially true of buildings built before 1980, but can also be true of later buildings containing insulation and other construction materials which were reformulated to contain vermiculite and other materials which are contaminated with asbestos.

Construction workers continue to be exposed to asbestos because of mischaracterization, or total lack of characterization in structures that were built prior to 1980. Many times the wide variety of asbestos containing materials (ACM) are unknown to the individuals that plan the additions, modifications, or demolition of said structures. Sometimes ACM carries a non-asbestos label due to changes in threshold limit values that have taken place as a result of new information.

A construction worker's exposure to asbestos can take place while he or she is doing a number of different jobs. Examples of different types of worker exposure are: renovating or demolishing old buildings, removing old insulation, repairing old boilers, removing old insulated ductwork, installing new wiring or repairing old wiring in attics or above drop ceilings and, when disturbing insulation and asbestos siding for renovation activities.

The problem is that these construction workers often do not know when they are exposed to asbestos. Many workers have not received even basic training in asbestos awareness. They do not realize the wide range of products that can contain asbestos. Most have heard about the insulation/asbestos relationship, but they are unaware that this silent killer can be found in floor tile, shingles and siding, older wire covering, and sometimes even the mastic or tar that covers the roof. When untrained workers disturb this material it is spread through the air to many parts of the job site. Many undocumented workers are unable to address even this basic concern because they have no ``rights'' due to their undocumented status.

It is not infrequent for contractors to knowingly ignore the requirements for the proper handling of ACM. These contractors do not remove or dispose of ACM in a proper manner. They pocket the cost of training, permitting and disposal fees. Often they work at night and use temporary or undocumented workers to avoid being detected. These contractors flourish by offering low cost ACM removal. Confusion is also generated by manufacturers' claims that chrysotile asbestos is not as hazardous as other forms of asbestos or that the concentration of asbestos is so low that it is not a hazard.

In summary, I respectfully submit the following recommendations to the committee to keep workers safe from asbestos exposure:

- <bullet> Increased asbestos awareness training for workers. Even though OSHA requires initial training of workers who can be exposed to asbestos, with follow-up annual refresher training, most construction workers have not been trained in how to work safely when disturbing or removing asbestos. The Center to Protect Workers' Rights and several Building Trades affiliates train workers who can be exposed to asbestos at EPA's Superfund sites and at Department of Energy nuclear weapons facilities. I believe that there is a great need for more funding to train asbestos-exposed construction workers.

- <bullet> Adequate medical screening. Because of the mobile nature of the construction workforce, it is difficult to provide adequate medical screening to determine when construction workers are experiencing asbestos-related health problems. Further, most state

workers' compensation systems don't compensate occupational diseases caused by asbestos. As a result, the burden of paying medical costs falls on the worker and any health insurance plan, not the employer. I believe that legislation is necessary to ensure that construction workers can obtain proper medical surveillance and not be burdened with the medical costs if they do become ill from asbestos exposure.

<bullet> License and bond ACM removal companies. A step in the right direction would be to strengthen the licensing requirement for all companies and individuals that both characterize and remove ACM. This licensing process would be coupled with the posting of a sufficient bond to cover all default and liability issues. All structures built prior to 1980 need to be characterized prior to any permits being issued for modifications or demolitions. All contracts for ACM removal should require the successful bidder to participate in a registered apprenticeship program that provides asbestos awareness education of all workers, both apprentice and journeyman, with specialized training for the individuals that work with ACM. Finally, I suggest increasing the amount of enforcement of existing asbestos standards, coupled with debarment of anyone who knowingly violates the asbestos regulations on removal and disposal.

I am pleased that the Senate is taking another look at the issue of workers unknowingly being exposed to asbestos. The Building Trades and Construction Department stands ready to work with the committee to remedy this problem.

With kind personal regards, I am

Sincerely yours,

Edward C. Sullivan,
President.

Statement of Michael McCann, PhD, CIH

I am a certified industrial hygienist with a doctorate in chemistry and since 1974 have specialized in the health and safety hazards of arts and crafts materials. In 1977, I formed the Center for Safety in the Arts, a not-for-profit organization, which I headed for almost 20 years. In 1992, we received a Mayor's Very Special Arts New York City Special Citation for our work. I am a consultant to art schools and art departments in schools and colleges. I have lectured and written extensively on art hazards, including the books Artist Beware, Health Hazards Manual for Artists, and Art Safety Procedures for Art Schools and Art Departments. In the early 1980's, I testified on the hazards of art and crafts materials at a Congressional Committee hearing and a New York State Assembly hearing. In 1980, I helped prepare comments on the use of asbestos-contaminated talc and vermiculite for the Consumer Product Safety Commission for their Proposed Rulemaking on Asbestos in Consumer Products.

Many artists, art teachers, and art students--including children--are exposed to asbestos-contaminated talc and vermiculite. Workers in the pottery and ceramics industries are also exposed.

Talc is a common additive to clays and pottery glazes which are used for making pottery. Many potters, art schools and college art departments--and even some secondary school art departments--purchase powdered clay, talc, and other ingredients to mix up their own clay and glazes. During the mixing process, these powders can be inhaled. The pottery glazes are often sprayed to apply them to the pottery before firing in a kiln to give a glazed finish. After firing, the glazed pottery is often sanded, which creates a dust which can be inhaled. I have even observed elementary school children sanding glazed pottery

made with talc-containing glazes.

One of the main sources of talc used in pottery has been the R.T. Vanderbilt Company, sold under the trade name NYTAL. This talc comes from mines in Gouverneur, New York. A quarter of a century ago, NIOSH studies found that talc from these mines were contaminated with both anthophyllite and tremolite asbestos, and that miners of this talc had high rates of asbestos-related cancers.

In 1979, Audrey R. Eichelmann, a ceramicist in Port Ewan, New York, developed mesothelioma, an incurable cancer caused almost exclusively by exposure to asbestos. She had never worked knowingly with asbestos, and her only possible exposure came from sanding and finishing porcelain dolls and other pottery that contained asbestos-contaminated talc. Audrey Eichelmann died on August 14, 1981 as a result of her cancer.

Vermiculite is also used in art as an additive in clay, plastic resins, and plaster as a filling or texturing ingredient. Artist and art students can be exposed to the dust from the vermiculite when they add it to these art materials. Asbestos contamination in some vermiculites is well established. Studies have shown, for example, that talc produced by W.R. Grace in Libby, Montana is contaminated with asbestos and that talc miners in Libby have high rates of asbestos-related cancers.

There are asbestos-free talcs and vermiculites. Unfortunately, the only way schools and artists have of determining whether their talc or vermiculite is asbestos-free is from information provided by manufacturers on labels and Material Safety Data Sheets. However, this information is often not reliable. For example, Vanderbilt has constantly denied that its talc contains asbestos and W.R. Grace has denied that its vermiculite contains dangerous levels of asbestos.

Even requesting analysis data from the manufacturer is not reliable. In one instance, I requested analytical data from a Texas talc supplier. The data provided stated that there was no detectable asbestos. However, the analytical method used had a detection limit of 5% asbestos. So this talc could have contained 4% asbestos and the testing method would not have detected it. It is not practical for artists or schools to have their own analysis performed.

What is the solution to this problem? There are asbestos-free talcs and vermiculites. I believe legislation is needed to ban asbestos-contamination in these and other consumer products. This ban should also require manufacturers to use state-of-the-art analytical techniques that can detect low levels of asbestos.

Prepared Statement of Barry Castleman

introduction

Thank you for inviting me to comment on the status of asbestos problems in the US and the world. I am trained in chemical and environmental engineering, and have a Doctor of Science degree from the Johns Hopkins School of Public Health. I have spent the past 30 years working on asbestos as a public health problem. I have been a consultant to numerous agencies of the US government and other governments, international bodies, and environmental groups dealing with a wide range of public health issues. I have also testified in civil litigation in the US, on the history of asbestos as a public health problem and the reasons for failures to properly control its hazards.

why ban asbestos?

Around 30 years ago, new federal agencies were created to deal with

such things as asbestos (EPA, OSHA, NIOSH, CPSC). Looking back, we can see that one lesson of the past 30 years of asbestos regulation is that nothing works better than a ban.

<bullet> There are still over 1000 OSHA asbestos citations/yr. in recent years including a brake plant still dry-sweeping more than 25 years after this was forbidden by first OSHA regulations.

<bullet> Some manufacturers facing specific product bans have waited until the day the ban took effect to stop selling the products, even products associated with substantial long-term liabilities. I shudder to think how long Georgia-Pacific would have taken to stop selling asbestos-containing drywall patching compounds if the Natural Resources Defense Council had not pressed the government (CPSC) to ban those products.

<bullet> The EPA ban on asbestos-containing sprayed fireproofing insulation was for some reason finally issued with a loophole allowing such products to be sold if they had less than 1% asbestos in them. Even I only learned in recent months that this scientifically unjustified tolerance enabled WR Grace to continue marketing sprayed products with just under 1% asbestos in them, marketed by the company as ``asbestos-free'' for many years after the EPA rules took effect.

I am not saying the EPA regulations justified WR Grace selling that attic insulation as ``asbestos-free''. Grace should at least have warned consumers of the presence of asbestos in the product from a mine that was originally called the Vermiculite and Asbestos Corporation when it opened back in 1919. I think that there should be personal, criminal liability for selling such products without warnings to consumers in the 1970s and 1980s. The history of asbestos product marketing is unfortunately replete with stories of what many people might regard as toxic corporate crime.

But my main subject here is regulation, not incarceration.

There is no safe variety of asbestos, and international and US authorities have repeatedly stated that there is no safe level of exposure to asbestos. It is impossible and unnecessary to try to control the hazards to workers from asbestos in automotive brake shoes and linings in new cars. Sweden led the world in showing in the 1980s that cars and trucks would stop just as surely with asbestos-free brakes. They started with replacement brakes for older cars and by 1987 added the requirement that new cars could not be sold in Sweden with asbestos brakes. In 1996, France decided to ban asbestos, and asbestos-cement construction product plants had to either convert to non-asbestos substitutes or shut down. The A-C plants converted to safer substitutes, and now use cellulose, fibrous glass, and/or polyvinyl alcohol fibers.

Starting with the Nordic countries, many leading nations in the control of occupational and environmental hazards have banned asbestos. By 1999, all the leading economic powers of Europe had banned asbestos, and the European Union had in place a deadline of 2005 for all member countries (and countries that want to join the European Union). Meanwhile, most of the countries of Asia and Latin America continue to use lots of asbestos, although they are wising up.

the epa's attempt to ban asbestos in the usa

The EPA tried to phase out the use of asbestos here in regulations published in 1989. All major uses of asbestos would have been banned in three groups, the last by 1997. When this was challenged in court, the rules were overturned because the court blamed EPA for not looking into a crystal ball and performing a quantitative risk analysis for all the substitute products that would replace the asbestos ones. EPA was miffed that the court laid such a burden on the agency and later wrote, ``EPA believes the court made significant legal errors in interpreting the Toxic Substances Control Act (TSCA) and in substituting its

judgment for that of EPA in balancing the costs and benefits of the asbestos-containing products banned by the rule.'' Nonetheless, EPA did not appeal the court decision, and 10 years later we still have asbestos products manufactured in and imported into the United States.

EPA attempted to get agreement of the auto manufacturers to phase out the use of asbestos in 1992, after the court overturned the ban rule. Though the initial response was encouraging, the auto companies scattered when the asbestos industry threatened an antitrust suit. So asbestos parts are still used in some new vehicles to this day, despite leading auto makers' assurances to EPA in 1992 that they could still meet the deadlines of the overturned ban/phase-out rule.

without a ban in the us, asbestos products continue to be imported

At least one US-based corporation has a plant in Mexico making asbestos-containing gaskets. If these products are among the gaskets imported into the US from Mexico, they would amount to a circumvention of OSHA and EPA asbestos regulations (with the associated costs these regulations entail). The consequent savings to the manufacturer (in fixed and operating costs, insurance, and liabilities) would constitute an unfair advantage in that the lowering of production costs (i.e., the increase in profits) occurs at the expense of the Mexican workers, environment, and taxpayers. This ``externalization of costs'' that by right should be part of the costs of production borne by the manufacturer constitutes an unfair advantage over US manufacturers of safer, asbestos-free gaskets.

In 1998, I visited a plant of a company called Teadit in Brazil, where I saw workers using punch presses and power saws on asbestos gasket materials without any local exhaust ventilation to capture the dust. One of the customers for the Teadit gaskets at that time was General Motors in Brazil. Teadit now has an office in Houston and offers asbestos gaskets made in Brazil in the US. You can buy punched gaskets from their distributor with no warning labeling.

Once asbestos gaskets are imported, they constitute a hazard to workers and consumers in the US. Quite possibly, by the time anyone gets sick from these products in the US, there won't be any corporate entity left standing to cover the liabilities from the death and disease caused by these products.

The US continues to import substantial amounts of asbestos-cement construction materials, asbestos brake shoes and linings, and other asbestos products. In the year 2000, the US imported over 50,000 metric tons of asbestos-cement articles and over 200 tons of asbestos textile products (yarn, thread, clothing)--these hazardous products are not even made in the US anymore, they haven't been for many years. The asbestos-cement products are mainly construction materials whose handling, transport, installation (with cutting, drilling, etc.), renovation, and demolition expose countless US workers and other citizens to hazardous occupational and environmental hazards. This is unnecessary contamination of the living environment. No doubt, it is largely unrecognized asbestos exposure; and even when it is identified as asbestos exposure, it is from a practical point of view uncontrollable by merely trying to enforce regulations on asbestos use. Asbestos textile products are generally made now only in the poorer countries, they are hazardous both to manufacture and to use. China, South Africa, Brazil, Mexico, and Korea are leading suppliers of these commodities imported in recent years by the US.

Included as an ``asbestos'' product import category is brake linings and pads, whose importation rose from \$59 million in 1996 to \$89 million in 2000. In the brake friction products category, leading exporters have included Brazil and Mexico. It is likely that some of the products included in this historically asbestos product classification are now asbestos-free, since we also have imported these

products from Germany and Denmark in 2000, countries where asbestos has long been banned. But unless and until the International Trade Commission creates separate commodity numbers for asbestos- and asbestos-free brake products we have no way of knowing the true extent and trend of asbestos product imports of this type. The same is true for the \$9 million worth of ``asbestos articles and friction material used in aircraft'' the US imported in 2000. Even some of the asbestos-cement product import categories are defined broadly enough to encompass non-asbestos fiber-cements using such things as cellulose fibers (``or the like'').

The only trade-neutral way to stop the continuing importation of asbestos products is to ban the manufacture, use, and importation of asbestos products in the US.

the wto asbestos decision

The World Trade Organization authorized national bans on asbestos in a case whose appellate decision was announced in March of 2001. Canada, which exports almost all of the asbestos it mines to the Third World, had challenged the ban on asbestos in France as an unfair trade measure. In the end, even the free trade fundamentalists at the WTO had to agree that ``controlled use'' of asbestos was unrealistic, that no level of exposure could be considered free from the risk of cancer, and that safer substitutes were available. The US, which usually sides with parties urging the elimination of barriers to trade, in this case agreed that France was justified in banning asbestos. I was a scientific advisor to the European Commission in defending the French ban at the WTO (for further details, see ``The WTO Asbestos Case and Its Health and Trade Implications'' at www.ibas.btinternet.co.uk).

auto makers lack global policy on asbestos

In 1998, I learned that General Motors was using asbestos-containing engine gaskets in new cars made in Brazil. I contacted a knowledgeable GM engineer named in a 1992 GM response to the EPA's effort to obtain a voluntary phase-out of asbestos by the car manufacturers. He explained that GM had converted to substitute materials in North America about 5 years earlier. At that time, GM was still using asbestos brakes on new Chevrolet Cavaliers and Pontiac Sunbirds, and had no plan to change before 2002. By 1998, most of the cars and even replacement brake parts sold by GM and the other auto makers in Europe had to be asbestos-free. I decided to ask each of the ``Big 3'' US auto makers if they had a global policy for eliminating asbestos parts.

The corporate public relations people at GM, Ford, and Chrysler were unwilling to answer my letters, and I persisted with follow-up telephone calls. I also wrote letters to senior management executives during the past year. When Chrysler merged with Daimler-Benz, I wrote to James Thomas, Director of Health, Safety, and Environmental Affairs, that perhaps the merger with the German firm (Germany banned asbestos in 1994) would be accompanied by a recognition that international double standards in occupational and environmental health are unacceptable, at least in the case of asbestos. When the New York Times editorialized (``Ford Motor's Environmental Candor'') that Ford Chairman William Ford appeared eager to make cars that were more socially acceptable, I wrote to him to ask if Ford had a global policy to eliminate asbestos. Four months later, after being asked in a deposition by a Ford lawyer if I had ever followed up on my original letter, I sent another note to Chairman Ford. When GM Vice Chairman Harry Pierce had a letter published in the New York Times about ``Getting Religion on Corporate Ethics'', I politely wrote to ask him if GM had a global asbestos elimination policy.

I have received only responses to the effect that, since I am listed as an expert witness in some product liability lawsuits brought

by brake mechanics with asbestos diseases against the auto companies for things that occurred in the past, the companies refuse to answer any of my questions. Though I neither regarded these inquiries as having anything to do with litigation nor was I paid for my work on this, it made no difference to the corporate officials and lawyers who have discussed this with me in phone calls and depositions. One even threatened me with some unnamed legal action if I persisted in trying to contact corporate officials.

Maybe it would help get these and the rest of the giant automotive companies to stop using asbestos if the US market for cars, trucks, and replacement parts was made asbestos-free by an act of Congress. If all these countries below can ban asbestos, surely the US can, too.

Asbestos Bans

date and event

1983--Iceland introduces ban (with exceptions) on all types of asbestos (updated in 1996).

1984--Norway introduces ban (with exceptions) on all types of asbestos (revised 1991).

Mid-1980s--El Salvador bans asbestos.

1986--Denmark bans (with exceptions) chrysotile asbestos.

1986--Sweden introduces the first of a series of bans (with exceptions) on various uses of chrysotile.

1988--Hungary bans amphibole asbestos minerals.

1989--Switzerland bans crocidolite, amosite and chrysotile (some exceptions).

1990--Austria introduces ban on chrysotile (some exceptions).

1991--The Netherlands introduces the first bans (with exceptions) on various uses of chrysotile.

1992--Italy introduces ban on chrysotile (some exceptions until 1994).

1993--Germany introduces ban (with minor exemptions) on chrysotile, amosite and crocidolite having been banned previously. The sole derogation remaining is for chrysotile-containing diaphragms for chlorine-alkali electrolysis in already existing installations. These will be banned as of 2011. Finland bans all forms of asbestos including chrysotile.

1996--France introduces ban (with exceptions) on chrysotile.

1997--Poland bans asbestos.

1998--Belgium introduces ban (with exceptions) on chrysotile. Saudi Arabia bans asbestos. Lithuania issues first law restricting asbestos use; ban 2004.

1999--UK bans chrysotile (with minor exemptions).

2000--Ireland bans chrysotile (with exceptions).

2000/2001--Brazil--the four most populous states ban asbestos as well as many towns and cities.

2001--Latvia bans asbestos (asbestos products already installed must be labeled). Chile bans asbestos.

2002--Spain and Luxembourg plan to ban chrysotile, crocidolite and amosite having been banned under earlier EU directives.

2003--Australian asbestos ban takes effect.

2005--Hungary expects to ban chrysotile. E.U. members Portugal and Greece deadline for Bans. Slovak Republic expects to adopt EU asbestos restrictions.

Other countries that have banned asbestos, for which ban dates are being sought: New Zealand, Czech Republic, Slovenia.

Statement of Gary F. Collins

Mr. Chairman, I want to thank you for the opportunity to submit my testimony by writing to the committee on the extremely important issues of work place safety and asbestos contamination.

Almost 35 years ago, my father, Donald E. Collins, went to work for the O.M. Scotts company thinking that he had found a job that could support his family. Instead, he ended up with a condition that would eventually kill him. In 1977, he was diagnosed with bilateral pleural effusions on his lungs. He had a lung biopsy performed at Ohio State University Medical Center. After the biopsy, he then underwent a left thoracotomy and a left lung decortication.

In 1978, my father once again went into the Ohio State University Medical Center and had a right lung decortication. After the first lung operation, the doctors suspected that he had been exposed to asbestos. In 1981, he had a triple bypass surgery on his heart. What my father had was asbestosis, an incurable thickening and scarring of the lungs, which gradually suffocates a person. The asbestosis aggravated his heart disease, forcing his heart to work harder to extract oxygen. In November of 1986 my father passed away. His death certificate states that he died of pulmonary fibrosis which can be attributed to the asbestosis.

My father worked for the O.M. Scotts Company from December, 1966 through May, 1974. The employees of the Scotts Co. were notified around 1976 that there was a possible asbestos contamination at the plant. However, others, including my father, were not notified until November, 1979, almost 3 years after the first employees had been notified.

The O.M. Scotts Company's actions during this period are inexcusable. The Company was fatally slow in notifying those individuals who were risking their health because of the asbestos contamination. The reason I believe that the O.M. Scotts company was slow in contacting these people was because of money. If it were publicized that the Scotts Co. was using asbestos in their fertilizer, which was sold to individuals and companies nationwide, the financial loss would have been tremendous.

I personally do not think O.M. Scotts cared that there was asbestos in the vermiculite that they were using. It was cheap and easy to use. They were covered under the Ohio Workers Compensation so they couldn't be sued. They neither worried nor cared about the effects it had on their workers.

In 1981, my father and Lloyd Gordon, another worker from Scotts, sued the O.M. Scotts Company and W.R. Grace and Co. for \$5.9 million. However, we ended up with much less. We settled for approximately \$200,000. We received a check for \$50,000 immediately after we settled the case. We then received monthly checks of \$500 that arrived each month for ten years. The rest of the money came at specified times over the next 20 years. The attorney's fees took most of the original lump sum. Of \$50,000, the attorneys took \$46,000.

After going through the two lung operations and the open heart surgery, my father rarely complained about what happened to him. He thought it more important to focus on the more positive aspects in life. The fact that he was still alive after going through the operations and the complications of surgery, such as, double pneumonia, was enough for him.

Before my father was afflicted with asbestosis, he was my coach in little baseball and football. This continued after and during his operations. His dedication to his son never wavered. He also took over the duties as Cub Scout Master for my cub pack. My father enjoyed these things. He felt like he was giving to the community, like his father had.

In 1977, in the midst of his operations, my father started college at Columbus Technical Institute, now known as Columbus State Community College. He used his GI Bill to get an Associates Degree in drafting. My father, while getting his degree, had his two lung operations. His surgeries were scheduled during times when school was on a break so he wouldn't miss any class time. Although he worked hard to get his degree, he never got to use it. My father was declared 100 percent disabled, barring him from doing any work where he would be covered under Workers Compensation. The only job my father could get was working 3rd shift as a security guard, part-time, so that it wouldn't interfere with his disability benefits.

During all this, my father continued to coach little league baseball. This was his life. In many ways, he saw it as a way to teach kids the fundamental aspects of baseball, but also the simple things in life that matter. My father was more than just a coach to many kids, to some he was a big brother, to others he was their only father figure. He loved being around the baseball field and the kids.

My father never let anyone, except my mother and I, know about the day-to-day pain he endured. From his chest hurting from the operations to the shortness of breath that would plague him, he quietly suffered. He didn't want anyone's sympathy; he just wanted to be treated like any other normal human being. When my father had to take his oxygen tanks with him to the ball field, he would explain to the kids what he was wearing so they would understand. He would tell them that it was something to help him breath because of his operations, and he would show them his scars. He was very patient with them. All of the parents who had kids on my fathers baseball teams would help explain to their kids what my father had gone through.

My mother and I seemed to grow stronger as individuals and grow closer during my father's illness. We both went through his pain with him. When we were at home, there were times when he would do nothing but sleep because the amount of work it took to just breath would wear him out. Hot and humid days were especially tough on him; because of the thickness of the air, it was hard for me to breathe--I know it had to be ten times harder on him.

My father and I would go through kind of a nightly routine. I would massage his back and rub vitamin E into his scars. I was the only person I think he allowed to touch them because he was so sensitive in those areas, even years after the operations.

I think my mother and I didn't really look at how the asbestos caused us any pain, but we did go through his pain with him. I used to get sympathy pains sometimes in my chest when his chest was hurting. My father didn't let what happened to him at Scotts slow down his life any. I think he was just as busy with his illness as he would have been had he not been stricken with the asbestosis. Don't get me wrong--this disease reduces the body it has entered down to a shell of what it use to be. It leaves them with little or no strength at all, and they need help with things that they once could do on their own.

Asbestosis strangles the body. My father, in layman's terms, died from lack of oxygen in the blood stream, which eventually suffocates the brain, and causes death. There is nothing that can be done to help a person who gets asbestos on their lungs, except a lung transplant. The chances of living a long life with new lungs is just as promising as living a long life with lungs that have been operated on, once they have been cleared of the asbestos; however, they still have scar tissue on them. They may have removed the asbestos from my fathers lungs, but the damage was done. The scar tissue did the rest of the damage. It caused him to work harder to get more oxygen into his blood, which caused him to have a heart attack in 1981.

My mother and I learned a lot from my father after his death in

November 1986. He taught us to live our lives to their fullest now because you never know what is going to happen to you. My mother helped at the church with the youth group. I joined the Air Force and served my country like my father had in the early 1960's in the Army. We both lived our lives to the fullest after his death. My mother passed away 10 years after my father of pancreatic cancer. When she found out that she had the disease, it was in the last states, and it was diagnosed as incurable. She did the same thing my father did. She did all that she could do to the best of her ability until she was no longer capable of doing so.

I have dedicated most of my life to working in state and local government. I have been the Mayor of Unionville Center, Ohio, which is the birthplace of Vice-President Charles Fairbanks. When I took over as Mayor, I had one goal in mind: to help the people of my village. That is what I did because that is what my father would have done. The greatest pleasure I get out of life is to help those who are unable to themselves and be an active part of society. I learned this through watching my father do the same thing.

How does all of this tie back into why asbestos is bad? Look at what my father did in his short period of time here on earth. Now, imagine what he could have done for his family and his community if he were still here, and he had not died from asbestos on his lungs. The same goes for all of the families that have been affected by the asbestos. What differences would they have made in today's society had they been able to contribute? I know it would have been substantial.

Currently, I serve as a Senior Fiscal Analyst for the Oklahoma House of Representatives. One of my responsibilities is to determine the fiscal impact of bills. I approach this job in much the same way. What is the cost efficiency of using a material that harms someone versus not using it? I think the impact is beyond comprehension. There is no dollar figure you can put on any one human life. However, the companies who mine and continue to use vermiculite do this everyday. They are saying a human life is worth this amount to use, and they are willing to pay that price. They do not understand the implications of their actions. They do not understand what it is like to lose someone because someone else decided that it was not a harmful product. They do not understand, and they will not understand until it happens to them.

I would like to thank the Committee for allowing me the chance to submit this written testimony. I would also like to thank Senator Murray for bringing forward such a very important topic that needs to be resolved soon, before more people are harmed by the affects of asbestos.

Statement of James Fite

Senator Patricia Murry and Committee Members, my name is James Fite; I am a founder and the current National Secretary of the White Lung Association. Victims of asbestos disease and their families formed the WLA in 1979. For over twenty years we have educated the general public to the hazards of asbestos exposure. We have testified before several Senate, House and regulatory agency hearings on the hazards of asbestos. We have thousands of members through the United States, Our lives are our testimony.

In the interest of time I will dispense with the horror and misery, which asbestos victims must endure. Do not be deceived to think that the compensation system or the tort system brings us justice. Over 80% of insurance and company funds paid for asbestos liability lands in the hands of non-victims. Please do not bother to shed crocodile tears for

our fate; we have seen it all before. What we want is sincere action on behalf of the people.

If you want to help asbestos victims, the people of the United States and the environment, please ban asbestos and assure that asbestos victims receive compensation.

Each year more people apply for compensation for their asbestos related disease. Each of the ``funds'' set up for victims has been exhausted because the courts ignored the evidence presented by the White Lung Association and underestimated the amount of people who have been diseased and disabled by asbestos exposure. This problem is not going away, it is getting worse. As terrible as our experience with asbestos has been, our society has not seen the worst yet. Please act to ban asbestos and adequately compensate the millions of its victims.

Ban Asbestos in the United States

The asbestos form minerals should have never been taken from the earth. Asbestos has killed over a million people in the United States. We continue to spend billions of dollars a year cleaning up for the past use of asbestos. Each year, over 250,000 sick people or their families, file claims for compensation for asbestos-related disease. Yet this horrible substance is still being distributed through our society. Asbestos used today will guarantee the deaths of thousands of our children and grand-children. Why does this madness continue? Why doesn't the United State congress join with Europe and over a dozen other countries in banning all uses of asbestos?

Until 1980, the U.S. industry placed 700,000 thousand tons of asbestos in over three thousand different building and machine parts. This was done each year. Many times the asbestos was only part of the mixture of glue, plaster, cement, paper, rope, gasket, break, pad or paint. Asbestos killed the workers who made and installed these products. As these products were used, the asbestos escaped to pollute everyone's environment. Now innocent children and adults, who have no occupational contact with asbestos, are getting deadly mesothelioma cancer. Asthma, lung infections like bronchitis, heart attacks, cancers/infections throughout the body are increasing as a result of asbestos exposure. Ninety-percent of autopsies in New York City showed asbestos related lung changes and fibers of asbestos. The ages ranged from 1-78.

Recently a national scandal erupted in Libby, Montana. Thousands of people, including children, are found to have asbestos related disease or are under constant monitoring due to asbestos exposure from the vermiculite mine. Vermiculite, known by the EPA to contain up to 14% deadly asbestos, is still allowed to be sold as attic insulation and potting soil. Now nursery workers, rail road workers and others are dying from asbestos disease due to their exposure to vermiculite. The EPA could have stopped this in 1984 but failed to do so. This example is one of thousands that show the ``controlled use'' of asbestos is not possible without spreading disease and death. Asbestos use in any form is deadly. Asbestos must be ban. The United States must forbid any company from exporting or importing asbestos. All contaminated areas must be cleaned properly. All asbestos victims must be fully compensated. This tragedy has gone on far too long. The asbestos industry represents only a fraction of 1% of the business community. Its assets and those of its insurers offer the basis for funding the solutions. No real solutions can be provided without first banning asbestos. The ban must include decontamination programs and compensation programs. The U.S. uses less than 25,000 tons of asbestos

each year and there are many suitable and safe substitutes.

Paul Safchuck,
President, White Lung Association.

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[Whereupon, at 4:30 p.m., the committee was adjourned.]